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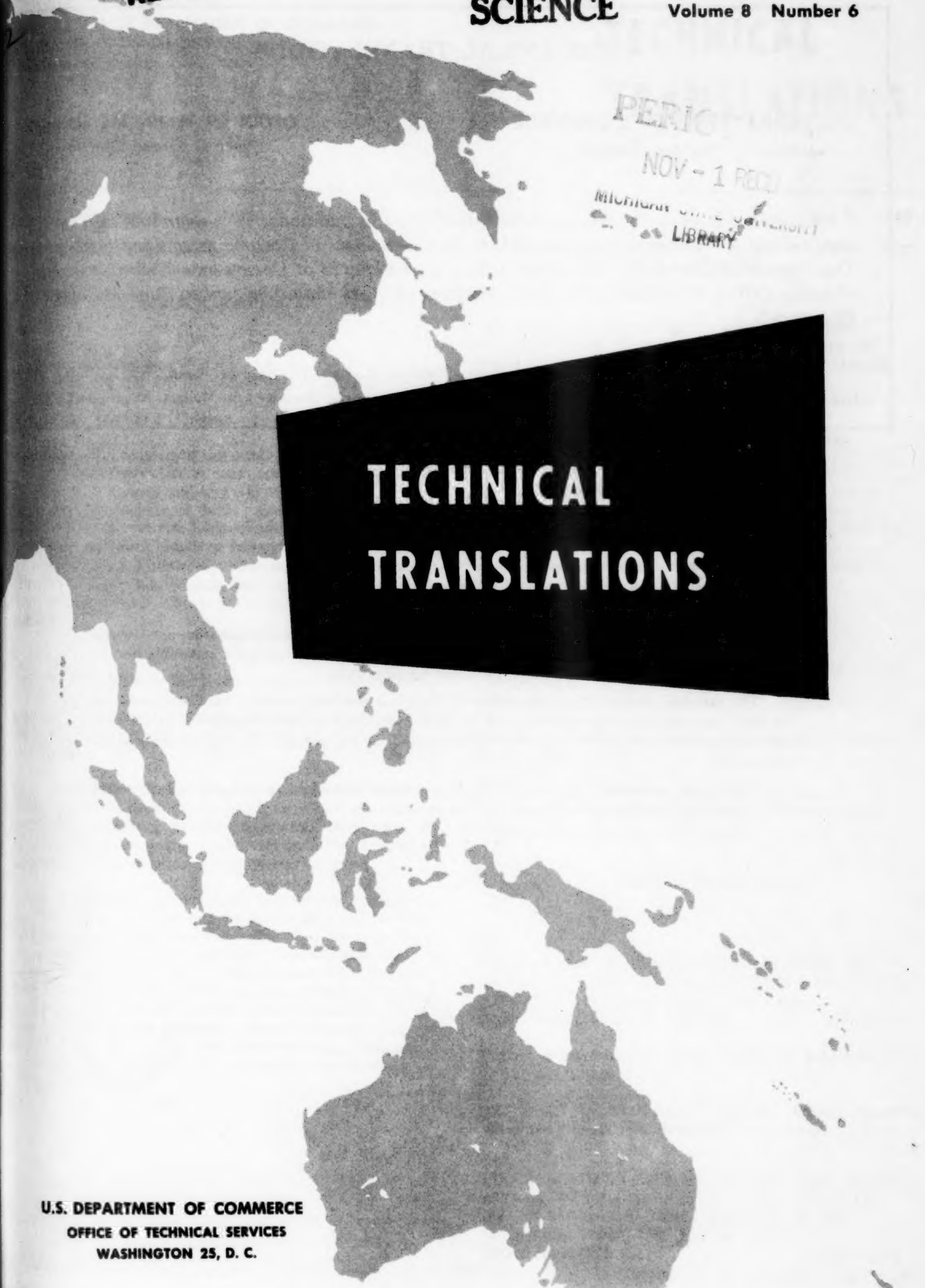

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
John C. Green, *Director*

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*Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
July 62, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
UNCONVENTIONAL POWER SOURCES. Feb 62, 19p.
427 refs. OTS Selective Bibliography SB-484
Order from OTS $0.10 OTS SB-484

DESCRIPTORS: *Power, Sources, Sea water batteries, Electric power production, Nuclear power plants, Nuclear propulsion, Rocket propulsion, Free radicals, Solar cells, Fuel cells, Thermoelectricity, Magnetohydrodynamics, Bibliography, Power supplies.

Lists 427 foreign and domestic references on direct and indirect electrical energy conversion, chemical conversion of waste heat into electrical energy, ion and plasma propulsion systems, electrostatic and magnetogasdynamic propulsion, photon rockets, sea water batteries, thermionic isotopic power systems, maritime and aircraft nuclear power systems, chemical and thermal power systems, power from free radicals, solar cells, fuel cells, thermoelectricity, charged colloids, and magnetohydrodynamics among other subjects. (Author)

AGRICULTURE

Korol'ova, M. S. and Rachyns'ka, Z. P., eds.
ATLAS OF THE AGRICULTURAL ECONOMY OF THE UKRAINIAN SSR, tr. by Bougan and Mychajluk, 15 Apr 62, 148p. H-8866.
Order from OTS $2.75 62-11689

Trans. of mono. Atlas Sil's'koho Hospodarstva Ukrains'koyi R.S.R., Kiev, 1958.

DESCRIPTORS: *Economics, *Agriculture, *Geography, Maps, Population, Fertilizers, Construction materials industry, Agricultural machinery, Terrain, *Climate, Geology, Soils, *Plants, Trees, Grasses, Cereals, Tobacco, Potatoes, Beets, Flax, *Animals, Cattle, Swine, Sheep, Goats, Milk.

Kundiev, Yu. I. and Podlinyaveva, M. E.
MEANS OF PERSONAL PROTECTION FROM TOXIC CHEMICALS. 26 Mar 62 [5]p. JPRS: 13231.
Order from OTS or SLA $1.10 62-23585

Trans. of Zashchita Rastenii ot Vresitelei i Boleznei (USSR) 1962 [v. 7] no. 1, p. 40-41.

DESCRIPTORS: *Insecticides, *Fungicides, *Herbicides, Toxicity, Contamination, *Protective clothing, Gas masks, Agriculture.

Animal Husbandry

REGULATION GOVERNING THE DISPOSAL OF ANIMAL CORPSES IN THE PEOPLE'S REPUBLIC OF BULGARIA. 24 Apr 61 [10]p. JPRS: 8145.
Order from OTS or SLA $1.10 62-19404

Trans. of Narodno Subranie. Izvestiya (Bulgaria) 1961, v. 12, no. 11, p. 5-6.

DESCRIPTORS: *Animals, *Disposal, Animal industry, Veterinary medicine, Sanitary engineering.

THE SCIENTIFIC CONFERENCE ON INFECTIOUS AND INVASIVE DISEASES OF FARM ANIMALS (NO. 3) 5-7 MAR 57. PROCEEDINGS, tr. by M. Artman. 1962, 63p. PL-480 Agr.
Order from OTS $0.75 61-31213

Trans. of mono. Materialy 3-i Nauchnoi Konferentsii po Infektsionnym i Invazionnym Zabolevaniyam Sel'skokhozyaistvennykh Zhivotnykh, Moscow, 1957 [99p.].

DESCRIPTORS: *Veterinary medicine, *Sheep, *Fungus infections, *Animals, *Brucellosis, Countermeasures, Diagnosis, Sensitivity, Cattle, Therapy, *Cattle, Immunization, Typhoid, Pregnancy, Pneumonia, Goats, Anthrax, Etiology, Mammary glands, Inflammation, Tuberculosis, Tuberculin, Ultraviolet radiation, Meat, *Food, Storage, Decomposition, Fishes, *Protozoa, Diseases, *Echinococcus, Worms, Epidemiology, Trematodes, *Ascaris, Chickens, Ticks, Attenuation, Drugs, Diptera, Phosphorus, Organic compounds, Alkoxy radicals, Chlorates.

Contents:
Sheep myrotheciosis, by K. I. Vertinskii and others
Measures for combating brucellosis of farm animals, by M. E. Avvakumov
Virulence and immunogenic properties of Brucella abortus bovis strain no. 1, by A. N. Kas'yanov
Studies on the effectivity of serological and allergic diagnosis of brucellosis in cattle, by A. I. Bychkov
Vaccination of sheep against brucellosis, by V. D. Chernigov
Treatment of brucellosis in cows, by E. I. Butkin
Immunization of calves against paratyphoid by vaccination of pregnant cows, by O. V. Ignatova
Studies on infectious pleuropneumonia of goats in Mongolia, by M. Zanaa
Serodiagnosis of fungal diseases, by K. P. Andreenko and T. A. Sysoeva
Trace reactions in animals infected with or immune to anthrax, by P. V. Bychkin
The etiology of mastitis in cows, by A. I. Laktionova
Serodiagnosis of tuberculosis in cattle, by S. S. Gitel'son
Avian tuberculin prepared on the synthetic medium of Model, by A. A. Zakomyrdin
The use of "necklace" reaction for bacteriological differential diagnosis of anthrax, by A. D. Melikhov
Effect of ultraviolet light of BUV-30-P bactericidal lamp and portable mercury-quartz lamp with PRK-4 burner on avian tubercle bacilli, by O. A. Metelkin
Properties of atypical strains of bacteria of the paratyphoid group isolated from meat of slaughtered animals, by E. V. Kiselev
Structural changes in food upon prolonged storage and decomposition, by V. A. Sharov
Methods for determining freshness of fish, by Yu. A. Puidak
Principles of differential diagnosis in the main protozoal diseases of farm animals, by G. S. Dzasokhov
Species composition of Echinococcus, by K. I. Abuladze
Studies on the effectivity of some antihelminthic drugs in experimental echinococcosis in dogs, by Yu. Yu. Patune
Epizootiology of sheep dicroeliasis and biology of the fluke in Kaluga Region, by I. I. Vershinin
Studies on the epizootiology of Heterakidosis in hens, by A. N. Osipov
Repeated feeding of ticks on the same animal as a factor leading to attenuation of the tick Rhipicephalus bursa Can et Fanz 1877, under laboratory conditions, by V. A. Musatov
Damage to cattle hide caused by the tick Hyalomma scupense, by G. M. Kuznetsova
Chlorophos treatment of cattle infested with Hypoderma bovis, by V. I. Potemkin and others
The use of methoxychlor in cattle infested with Hypoderma in Ukhtomskii District, Moscow region, by A. A. Gil'denblat and others.

Gushchin, N. I. and Vasin, A. D.
STANDARDS OF WORKING TIME FOR VETERINARY WORKERS EMPLOYED IN ANIMAL HUSBANDRY. [1962] [16]p.
Order from OTS or SLA $1.60 62-16086

Trans. of Veterinariya (USSR) 1962, v. 39, no. 1, p. 15-22.

DESCRIPTORS: *Standards, *Veterinary medicine, Medical personnel, Human engineering, Labor

Lebedev, P. T.
ZOOHYGIENICAL MEASURES FOR PROPHYLAXIS OF INFECTIOUS ATROPHIC RHINITIS IN PIGS (Zoogigienicheskie Meropriyatiya v Profilaktike Infektsionnago Atroficheskogo Rinita Svinei). [1962] [6]p.
Order from OTS or SLA $1.10 62-14848

Trans. of Veterinariya (USSR) 1962, v. 39, no. 1, p. 66-69.

DESCRIPTORS: *Swine, *Mucous membranes, Infections, Control, Feeding, Veterinary medicine

Use of full-value feeds during the final stage of gravidity of sows does not preserve the young from being affected with rhinitis (when they are kept together with the sows until separation). When healthy young females are grown for breeding purposes under conditions of isolation, it is necessary, in order to avoid rhinitis, to adopt favorable feeding, keeping, and observation practices. As a prophylactic measure against atrophic rhinitis, young breeding and meat sows should be grown in separated groups, under constant observation on the part of veterinarians and animal husbandry specialists. Keeping, feeding, and observation of breeding sows should be carried out in accordance with zoohygienic requirements ensuring both the reproducing capacity of animals and obtaining young pigs resistant to diseases. (Author)

Masic, M.
THE MECHANISM OF THE INFECTION OF CATTLE WITH AUJESZKY'S DISEASE. 5 Jan 62 [8]p.
JPRS: 11820.
Order from OTS or SLA $1.10 62-19598

Trans. of Acta Veterinaria (Yugoslavia) 1961, v. 11, no. 1, p. 49-54.

DESCRIPTORS: *Virus diseases, *Cattle, *Swine, Immunity, Resistance.

Aujeszky disease in swine is widespread in Vojvodina. There are grasslands where swine and cattle feed together. In none of the farms in which an enzootic condition of Aujeszky disease in swine has been repeatedly found have there been any cases in cattle. On the other hand, occasional cases are known in cattle which have had no contact with swine. Swine are probably a very important reservoir of the virus of Aujeszky disease.

But there are other reservoirs of this virus. In experiments a heifer was not infected when in cohabitation with rabbits or with rats or with a diseased heifer. Accordingly infection by cohabitation does not occur. For intramuscular infection in heifers it was necessary to use a very large concentration of the virus (10^{-1}), since with a small concentration of virus (10^{-3}) it was not possible to transmit the disease. Cattle seem rather resistant to Aujeszky virus. This relative resistance does not depend on immunity, but is conditioned by biological features connected with the species. Neutralizing antibodies were not found in sera of the heifers. In spite of the extensiveness of Aujeszky disease in swine in Vojvodina, the potential danger to cattle is not great.

Muradyan, A. V.
MEANS OF PREVENTING MASTITIS IN COWS
(O Merakh Preduprezhdeniya Mastitov u Korov). [1962]
4p.
Order from OTS or SLA $1.10 62-10654

Trans. of Veterinariya (USSR) 1961, v. 38, no. 12, p. 13-14.

DESCRIPTORS: *Mammary glands, *Infections, *Cattle, Countermeasures.

Niznansky, F., Nosal, M., and Velvart, J.
OCCUPATIONAL INFECTION BY BRUCELLA ABORTUS IN CZECHOSLOVAKIA (Biologicke Vlastnosti Brucelovych Kmenov Izolovanych v CSSR. III. Cast. Zriedkavy Pripad Profesionalne Infekcie s Izclaciou Kmena Brucella Abortus). 12 May 61 [14]p.
JPRS: 9258.
Order from OTS or SLA $1.60 62-19459

Trans. of Bratislavske Lekarske Listy (Czechoslovakia) 1960, v. 40, no. 3, p. 156-160.

DESCRIPTORS: *Brucellosis, *Man, *Animals, Control, Vital statistics, *Veterinary medicine.

During the 1945-1955 period we have diagnosed and treated (In the First Clinic of Internal Diseases until 1950, and in the Clinic of Occupational Diseases since that date) 47 patients suffering from brucellosis, including 34 professionals (veterinary workers) and 13 non-professionals, but active predominantly in agriculture. In later years the frequency of diagnosed occupational brucellosis in our Clinic was as follows: 1956, 12; 1957, 14; 1958, 3. The actual number of all persons suffering from brucellosis is probably much larger, and it will be necessary to pay more attention to brucellosis in current clinical practice. (Extracted)

Trbic, B. and Brdaric, V.
INFLUENCE OF THE RELATIONS OF THE ANTIGENIC STRUCTURE OF BRUCELLOSIS AND CERTAIN BACTERIA ON THE SERUM -DIAGNOSTICS OF BRUCELLOSIS IN SWINE. 24 July 61 [12]p. 6 refs.
JPRS: 4796.
Order from OTS or SLA $1.60 62-19712

Trans. of Veterinarski Glasnik (Yugoslavia) 1961, v. 15, no. 3, p. 191-200.

DESCRIPTORS: *Brucellosis, *Bacterial toxins, Bacteria, *Serum, Antigens, *Diagnosis, *Swine.

It is concluded: (1) that classical agglutination does not present a sure diagnostic method in testing for brucellosis, except in negative cases, i.e., when there is a negative reaction;(2) between Brucella and Salmonella of group D (especially S. gallinarum, S. Dublin and S. pullorum of a variant and intermediate strain) there is a common factor XII_2, and due to this, co-agglutinations result: (3) this factor is found also in Proteus O-X-19 and Pseudomonas aeruginosa and probably with other Gram-negative bacteria. (Author)

Vanenkov, M. V. and Desyatnikov, B. L.
DIAGNOSIS AND EPIZOOTOLOGY OF RABIES
(Diagnostika i Epizootologiya Beshenstva). [1962] [3]p.
Order from OTS or SLA $1.10 62-14852

Trans. of Veterinariya (USSR) 1962, v. 39, no. 1, p. 23-24.

DESCRIPTORS: *Cattle, *Nervous system, Diseases, *Rabies, Diagnosis, Epidemiology, Veterinary medicine

Absence of Negri bodies in a given pathological material cannot be adduced as a criterion excluding the diagnosis of rabies. For the purpose of detecting Negri bodies, biotests are a better methodology than smear microscopy. The best and most rapid means for diagnosing rabies in cattle is the reaction of precipitation in agar gel. In the majority of cases, the onsets of rabies in Aktyubinsk region are attributable to foxes and to Russian wolfhounds. (Author)

Vasil'ev, V. G.
MECHANIZATION AND AUTOMATION OF POULTRY RAISING IN THE U. S. A. (Mekhanizatsiya i Avtomatizatsiya Ptitsevodstva v SSHA). 12 Mar 62, 32p.
(16 figs. omitted). Trans. A-1330.
Order from OTS or SLA $3.60 62-23853

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961, v. 6, no. 7, p. 143-155.

DESCRIPTORS: *Automation, *Chickens, Feed pellets, Meat, Eggs, Reproduction, Growth.

Zakharova, F. V.
CHANGES IN THE DEVELOPMENT OF YOUNG PIGS AND IN THEIR BLOOD INDEXES DURING ATROPHIC RHINITIS (Izmeneniya v Razvitii Porosyat i Pokazatelei Ikh Krovi pri Atroficheskom Rinite). [1962] [9]p.
Order from OTS or SLA $1.10 62-14850

Trans. of Veterinariya (USSR) 1962, v. 39, no. 1, p. 43-46.

DESCRIPTORS: *Swine, Growth, *Mucous membranes, Infections, *Blood, Morphology, *Plasma proteins, Veterinary medicine

In atrophic rhinitis, alterations take place in the mineral and in some aspects of the protein metabolism, reflected in the appearance of hypophosphoremia and in distrubed calcium-phosphorus ratio. The blood shows increased plasma proteins, total nitrogen, and residual nitrogen. The fractional composition of plasma proteins in very young diseased pigs approaches that of normal animals at an older age. Alterations in the weight of parenchymatous organs and of endocrine glands can serve as indexes of growth and development of the animals. There is a characteristic decrease in the rate of the weight increase during the initial stage of the disease; although the rate increases somewhat at a later stage, it still remains smaller than that observed in normal animals of similar age. Young pigs of both low and high weight can develop atrophic rhinitis, provided there is a decrease in blood β-globulin. As a rule, however, in young pigs with high weight at birth, the disease assumed a milder form. α_2-Globulin appeared in their blood, the protein coefficient decreased, while the contents of β- and γ-globulins increased. (Author)

Zotov, A. P.
RESULTS OF RESEARCH IN THE FIELD OF Q-FEVER AND TULAREMIA IN AGRICULTURAL ANIMALS (Itogi Issledovaniya Ku-Likhoradki i Tulyaremii Sel'sko Khozyaistvennykh Zhivotnykh). 13 Mar 62, 26p. Trans. V-1768.
Order from OTS or SLA $2.60 62-23562

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 202-214.

DESCRIPTORS: *Animals, Agriculture, Veterinary medicine, *Q fever, *Tularemia, Diseases.

Plant Cultivation

MEASURES TAKEN IN PLANT PEST CONTROL. 17 July 62 [7]p. JPRS: 14491.
Order from OTS or SLA $1.10 62-25981

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1961 [v. 6] no. 5, p. 1-3.

DESCRIPTORS: *Plants, *Pest control, *Diseases, *Herbicides, *Insecticides, Corn, Beets, Agricultural machinery.

Asmaev, P. G. and Mokhnachev, I. G.
ON THE QUESTION OF CHANGING THE COMPOSITION AND PROPERTIES OF TOBACCO PROCESSED AT DIFFERENT TEMPERATURES. [1962] 10p.
Order from K-H $12.50 K-H 11249-a

Trans. of Tabak (USSR) 1959 [v. 20] no. 3, p. 55-59.

DESCRIPTORS: *Tobacco, Processing, Temperature.

Elagin, I. N.
SELECTION SEED GROWING WORK WITH EARLY RIPENING HYBRIDS AND VARIETIES OF CORN (Selektsionno-Semenovodcheskaya Rabota so Skorospelymi Gibridami i Sortami Kukuruzy). 24 Apr 62, 15p. Trans. A-1343.
Order from OTS or SLA $1.60 62-24527

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961, v. 6, no. 12, p. 151-154.

DESCRIPTORS: *Seeds, Selection, Growth, *Corn, Production, Agriculture.

Regardless of a large amount of regionalized hybrids and varieties of corn, no early-ripening and high-productive hybrids and varieties were produced for the new regions of corn planting. The scientific research establishments, located in the southern and northern regions, must coordinate their work on the selection of early-repening corn hybrids for a faster production of high-productive hybrids and an effective conducting of seed growing. Simultaneously with this, it would be expedient to expand the zone of seed growing and draw it nearer to the place of utilization, to construct factories for treatment of corn seeds, correctly to plan the productivity for seed growing sowings and to increase the personal pecuniary interest of the seed growing farms.

Genkel', P. A.
ALGA CHLORELLA AS A SOURCE OF ORGANIC SUBSTANCE AND OXYGEN. 13 Mar 62 [15]p. JPRS: 12953.
Order from OTS or SLA $1.60 62-23635

Trans. of Biologiya v Shkole (USSR) 1961, no. 3, p. 76-80.

DESCRIPTORS: *Algae, Culture, Nutrition, *Vitamins, *Amino acids, Oxygen, *Solar energy.

Ivanov, E. N.
COORDINATION COUNCIL FOR PLANT PROTECTION (Koordinatsionnyi Sovet po Zashchite Rastenii). 1 Dec 61, 9p. Trans. A-1319.
Order from OTS or SLA $1.10 62-23295

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961 [v. 6] no. 5, p. 153-155.

DESCRIPTORS: *Plants, *Herbicides, *Diseases, *Pest control, Parasites, Diptera, Ants, Insecticides.

Lebedik, A. I.
PROGRESSIVE TECHNOLOGY OF SUGAR BEET CULTIVATION (Progressivnaya Tekhnologiya Vozdelyvaniya Sakharnoi Svekly). 24 May 62, 24p. (12 figs. omitted). Trans. A-1349.
Order from OTS or SLA $2.60 62-25041

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962, v. 7, no. 2, p. 104-116.

DESCRIPTORS: *Agricultural machinery, Automation, *Beets, Herbicides, Fertilizers, Growth, Production.

Volodarskii, N. I. and Bykovskaya, I. P.
INFLUENCE OF VARIABLE SOIL MOISTURE ON THE FORMATION OF THE YIELD OF TOBACCO PLANTS IN CONNECTION WITH THEIR PASSAGE THROUGH THE DEVELOPMENTAL STATES (Vliyanie Peremennoi Vlazhnosti Pochvy na Formirovanie

Urozhaya Tabaka v Svyazi s Prokhozhdeniem Stadii Razvitiya). [1962] [8]p. 9 refs.
Order from OTS or SLA $1.10 62-10747

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 95, no. 1, p. 187-190.

DESCRIPTORS: *Tobacco, Growth, *Soils, Moisture, Plants.

Pot and field experiments showed that water deficiency at the stage of vernalization and at the light stage leads to depression of the growth processes. However, at the vernalization stage the young plant adapts to water deficiency and develops xeromorphic characters, and this causes a sharp increase in the growth processes when the plants are given abundant water at the end of that stage. These plants often grow larger leaves and yield a better harvest than in conditions of constant abundant water supply. In the case of water deficiency at the light stage and in the second phase the growth processes are more severely depressed, and to a large extent irreversibly. The position is aggravated by the circumstance that in the preceding phase (at the vernalization stage) the plants had adapted to abundant water supply. Water deficiency at the light stage of development invariably reduces the yield of green mass

ASTRONOMY

LUNAR TERMS: RUSSIAN-ENGLISH GLOSSARY, 1952-60. 4 Apr 60 [32]p. AF 1419559.
Order from OTS or SLA $3.60 61-28360

DESCRIPTORS: Astronomy, *Moon *Vocabulary.

Denisse, J. F.
SOLAR RADIO PHENOMENA AND THEIR PHYSICAL INTERPRETATION (Les Phenomenes Radioelectriques Solaires et Leur Interpretation Physique) tr. by Samuel Katzoff. Sep 61, 10p. 4 refs. NASA Technical trans. F-72; AD-263 084.
Order from OTS $0.50 61-31612

Trans. of mono. [paper] presented at the Union Radio Scientifique Internationale: General Assembly (no. 13) London, 12 Sep 60.

DESCRIPTORS: *Radio astronomy, *Solar flares, Intensity, *Particles, Ejection, Magnetic fields, Propagation, Wave transmission, *Magnetohydrodynamics, Radio transmission, Astrophysics.

The various types of waves that can arise in the coronal plasma and the conditions for their escape beyond the corona are discussed. The centimeter bursts of radiation and type IV bursts can be interpreted as synchrotron radiation of relativistic electrons. The bursts of type III and type II are most probably due to the excitation of oscillations of the coronal plasma by high energy particles; but whereas the particles responsible for type III seem to pass through the corona freely, those which radiate type II are probably trapped in a magneto-dynamic wave. Radio storms are probably also due to the excitation of oscillations of the coronal plasma by the particles initially ejected during an eruption, these particles remaining trapped for several days in the permanent magnetic configurations near the sun. (Author)

Astrophysics

Idlis, G. M. and Obashev, S. O.
THE MAGNETIC FIELD AND ROTATION PERIOD OF VENUS, tr. by B. W. Kuvshinoff. 29 June 62, 6p. 27 refs. APL/JHU TG 230-T304.
Order from OTS $0.50 62-11724

Trans. of A[kademiya] N[auk] K[azakhskoi] SSR [Alma-Ata]. Astrofizicheskii Institut. Izvestiya, 1961, v. 12, p. 91-94.

DESCRIPTORS: *Venus, Rotation, Magnetic fields, Astrophysics, Radio astronomy.

A theoretical analysis shows that the magnetic moment of Venus is 4×10^{24} gauss/cm^3 if the rotation period is about 14 days.

Kozyrev, N. A.
THE RIDDLE OF THE "MORNING STAR". 21 Mar 62 [5]p. FTD-TT-62-162; SC-1075.
Order from OTS or SLA $1.10 62-24276

Unedited rough draft trans. of Nauka i Zhizn' (USSR) 1961 [v. 28] no. 5, p. 27-28.

DESCRIPTORS: Stars, Plants, *Zodiacal light, Night sky, *Venus, Spectrographic analysis.

On March 18, 1953 on the reflector of the Crimean Astrophysical Observatory, a spectrum was obtained of the light of the dark side of Venus. This spectrogram proved the reality of the ashen light of Venus. The highest layers of the atmosphere, glow. Therefore, one of the main causes of the Ashen Light of Venus is the illumination of the night sky, a phenomenon well-known on earth. A measurement of the spectrum showed that the night sky of Venus glows 50 or 100 times more brightly than the night sky of the earth. More than 40 bright bands and lines were noted in the spectrum. Some of them were caused by the illumination of ionized nitrogen. The green and red lines of atomic oxygen are completely absent in the spectrum of the ashen light of Venus. However most of the lines are lines of the ions of atomic oxygen. The absence of green and red lines of atomic oxygen in the spectrum can be explained by the high electron density in the inosphere of Venus. The great brightness and the particular character of the light of the Venusian ionosphere indicates that emission of radio waves by Venus, which was detected by American and Soviet radiophysicists, proceeds, not from the surface, but from the ionosphere of Venus. The measured radiation of Venusian radio waves corresponds to a temperature above 300°C. The radio-astronomical data suggest that the ionosphere of Venus emits on those wavelengths for which the earth's ionosphere is transmissive. This can lead to a serious complication in the radio communications between Venus and the earth.

Radzievskii, V. V.
PLANETOCENTRIC RADIATION BRAKING EFFECT.
[1962] 6p. 6 refs.
Order from OTS or SLA $1.10 62-10800

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 74 no. 2 [p. 197-200].

DESCRIPTORS: *Planets, Planetary atmospheres, Radiation effects, Satellites.

The sharp division of the planets into two groups according to their mass is explained by O. Yu. Schmidt by the heliocentric radiation braking effect, which produces scarcity or matter in the near neighborhood of the sun. A qualitative explanation can be given for the absence of satellites of Mercury and Venus. Matter trapped by any planet must fall into it in approximately the same time during which the sun is cleaning out the range of the given planet. The presence of the planetocentric effect may be considered as a new argument in favor of the proposition that the equatorial acceleration in the atmospheres of large planets favors the falling into the planets of meteoric particles which revolve around the planets principally in the planes of their equators. It is not difficult to estimate the relative dimensions of particles in different zones, and to determine the age of the ring of Saturn on the basis of existing estimates of the dimensions of the particles forming it.

Siforov, V. I.
RADIO ELECTRONICS IN INVESTIGATIONS OF THE COSMOS: RADIO STUDIES OF COSMIC OBJECTS [AND] THE POSSIBILITY OF RADIO COMMUNICATION WITH OTHER PLANETS (Radioelektronika v Issledovaniyakh Kosmosa). 18 Jan 62 [7]p. 1 ref.
FTD-TT-61-85; AD-270 793.
Order from OTS or SLA $1.10 62-15821

Unedited rough draft trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii. Seriya 9 (USSR) 1960 [no. 20] p. 41-44.

DESCRIPTORS: *Meteors, Ionosphere, Ionization, Moon, Venus, Radar signals, *Radar reflections, Planets, Stars, Animals, Probability, Radio communication systems, *Extraterrestrial radio waves, *Radio astronomy.

The vigorous development of science in our time has far outstripped the most fervid fantasies. There is no doubt that the problem of establishing communication with rational beings of other worlds will be solved. And radio electronics will play a major role in solving this most difficult problem. (Author)

Zotkin, I. T.
THE ANOMALOUS OPTICAL PHENOMENA IN THE ATMOSPHERE ASSOCIATED WITH THE FALL OF THE TUNGUSKA METEORITE. 16 Jan 61 [3]p. AID Rept. 62-5; AD-271 540
Order from OTS or SLA $1.10 62-19121

Abstract trans. of Meteoritika (USSR) 1961, v. 20, p. 40-53.

DESCRIPTORS: *Meteorites, Optics, Atmosphere, Optical analysis, Siberia, Explosions, Comets.

A number of peculiarities of the optical phenomena attest to the cosmic nature of the Tunguska meteorite. First, the phenomenon propagated very rapidly over an extremely wide area. The fall of the meteorite occurred at midnight, World (Universal) Time, and at 2200 hours the luminance was observed in England at a distance of 6500 km. If the matter which caused the luminance (dust, for example) was propagated from the point of the meteorite's fall, then its velocity must have been at least 270 to 300 km/hr. Secondly, in order to account for the brilliant twilights at latitudes relatively farther south, it must be assumed that the dispersing matter was at a height too great to have originated from the earth's surface; in other words, it propagated from outer space. Thirdly, the prolonged period of brilliant luminance of three days after the meteorites's fall is noteworthy. These are indications of the comet nature of the Tunguska meteorite. The data on the optical phenomena give evidence of the intrusion in the sky of a massive cloud of dispersed matter, that is, of the cover and core of a small comet. (See also 62-10178, 62-11648, 62-24482)

BEHAVIORAL SCIENCES

Personnel and Training

BIOGRAPHIES OF SOVIET SCIENTISTS. 28 May 62 [27]p. 38 refs. JPRS: 13976.
Order from OTS or SLA $2.60 62-25004

Trans. of 9 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Plants, Agriculture, Civil engineering, Public health, Surgery, *Medical personnel, Medicine, Metallurgy.

Contents:
K. S. Afanas'ev, M. S. Dunin, V. I. Edel'shtein,
M. V. Fedorov, U. I. Lozovyi, A. E. Rauer,
N. A. Shereshevskii, A. P. Urushadze,
D. M. Yukhtanov.

BIOGRAPHIES OF SOVIET SCIENTISTS. 17 July 62 [33]p. 158 refs. JPRS: 14489.
Order from OTS or SLA $3.60 62-25982

Trans. of 10 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Medical personnel, *Scientific personnel, Chemistry, Medicine, Public health.

Contents:
M. M. Amosov, R. A. Babayants, G. Granovskii,
F. N. Grinchar, L. Liepina, V. S. Lyashenko,
N. K. Pshenitsyn, A. Ya. Pytel', I. I. Speranskii,
I. P. Tzukervanik.

BULGARIAN SCIENTIFIC DECREES, NOS. 63 AND 70. 16 Nov 60 [19]p. JPRS: 6260.
Order from OTS or SLA $1.60 62-19292

Trans. of Narodno Subranie. Izvestiya (Bulgaria) 1960 [v. 11] no. 63, p. 1; no. 70, p. 2-6.

DESCRIPTORS: Scientific research, Industrial research, *Professional personnel, Training.

Contents:
Decree for granting Dimitrov awards, no. 63, 5 Aug 60
Raising the requirements for scientific titles and degrees, decree no. 188, 30 Aug 60.

DECREE ON TRAINING OF TECHNICAL ASSISTANTS IN THE FIELD OF NATURAL SCIENCES, 10 DEC 60. 10 Apr 61 [5]p. JPRS:8070.
Order from OTS or SLA $1.10 62-19439

Trans. of Gezetzblatt der Deutschen Demokratischen Republik (East Germany) 1961, pt. 2, no. 2, p. 3-4.

DESCRIPTORS: *Scientific personnel, Personnel, Training, East Germany.

NEW DOCTORS AND CANDIDATES OF SCIENCES, JUNE 61. 13 Apr 62 [14]p. JPRS: 13449.
Order from OTS or SLA $1.60 62-24004

Trans. of Magyar Tudomany (Hungary) 1961, v. [6]68, no. 9, p. 572-577.

DESCRIPTORS: *Scientific personnel, *Education, Training, *Theses.

NEW HUNGARIAN DOCTORS AND CANDIDATES, JAN 62. 21 June 62 [7]p. JPRS: 14213.
Order from OTS or SLA $1.10 62-25473

Trans. of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 4, p. 269-271.

DESCRIPTORS: *Hungary, *Scientific personnel, Medical personnel, Physicists, Mathematicians, Chemists, Engineering personnel, Personnel.

SCIENTIFIC AND TECHNOLOGICAL MANPOWER RESOURCES IN BULGARIA: [GENERAL INFORMATION] 1954-59. 24 Feb 60 [28]p. 20 refs. AF 1419488.
Order from OTS or SLA $2.60 61-28342

DESCRIPTORS: *Labor, Industry, *Scientific personnel, *Engineering personnel, Training, Universities, Education, *Professional personnel, *Women, Economics, Control, Bulgaria.

Contents:
National employment data
Characteristics of scientific and technical personnel
Training facilities for scientists, engineers, and technicians
Working conditions of scientific and technical personnel
Specialities of scientifics, engineers, and technicians
Shortages in specialized manpower
Women and their role
Outstanding scientists
Financial data
Exchange of know-how
Important legislation
List of references.

SCIENTIFIC AND TECHNOLOGICAL MANPOWER RESOURCES IN EAST GERMANY: [GENERAL INFORMATION] 1951-60. 25 Mar 60 [34]p. (2 figs. omitted) 30 refs. AF 1419555.
Order from OTS or SLA $3.60 61-28343

DESCRIPTORS: *Labor, Industry, *Scientific personnel, *Engineering personnel, *Professional personnel, Training, Universities, Education, Scientific intelligence, *Women, Costs, East Germany.

Contents:
Basic employment data
Characteristics of scientific and technical personnel deficiencies in specialized manpower
Training facilities for scientists, engineers, and technicians
Future demand for scientific and technical personnel
Working conditions of scientific and technical personnel
Scientific intelligence advances research
Preponderance of applied research
Women and their role
Cost of science effect
List of references.

SCIENTIFIC AND TECHNOLOGICAL MANPOWER RESOURCES IN ROMANIA: [INFORMATION] 1948-60. 24 June 60 [48]p. 68 refs. AF 1419616.
Order from OTS or SLA $4.60 61-28344

DESCRIPTORS: *Labor, Industry, *Scientific personnel, *Professional personnel, Training, Universities, Education, *Engineering personnel, Automation, *Women, Economics, Control, Rumania.

Contents:
Basic employment data
Characteristics of scientific and technical personnel
Training facilities for scientists, engineers and technicians
Working conditions of scientific and technical personnel
Specialties of scientists, engineers and technicians
Scientists in basic and applied research
Deficiencies in specialized manspower
Automation and its role
Women and their role
Outstanding scientific personnel
Scientists, engineers and technicians in military and economic planning

Research and development
Exchange of know-how
Interaction of the party, governmental, ministerial a and scientific institutions in the development of specialized manpower
Important legislation
Cost of science effort
List of references.

TRENDS IN SCIENCE AND TECHNOLOGY IN COMMUNIST CHINA. PT. IV. SCIENTISTS. 15 Mar 60 [35]p. 27 refs. AF 1419526.
Order from OTS or SLA $3.60 61-28368

DESCRIPTORS: Scientific research, Industrial research, China, *Scientific personnel, *Professional personnel, *Engineering personnel, Science.

Guzov, V. V.
INTERNATIONAL SCIENTIFIC DEVELOPMENTS: INTERNATIONAL SCIENTIFIC CONTACTS OF SOVIET MEDICAL SCIENTISTS INCREASE. [1962] 9p. 1 ref.
Order from OTS $0.50 62-11141

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1958, [v. 13] no. 9, p. 79-81.

DESCRIPTORS: *Medical personnel, Medical research, Scientific organizations.

Psychology

Ahrens, Rolf.
CONTRIBUTION ON THE DEVELOPMENT OF PHYSIOGNOMY AND MIMICRY RECOGNITION, PT. I (Beitrag zur Entwicklung des Physiognomie- und Mimikerkennens) tr. by K. A. Hochschwender. 1 Mar 60, 58p. (45 figs. summary refs. omitted). NIH no. 3-1-60.
Order from OTS or SLA $5.60 60-15645

Trans. of Zeitschrift für Experimentelle und Angewandte Psychologie (West Germany) 1954, v. 2, p. 412-454.

DESCRIPTORS: *Psychology, *Infants, *Face, *Reaction (Psychology), Eyes, Mouth, Sensory perception, Conditioned reflex, Behavior, Physiology.

Bozhovich, L. L.
THE PSYCHOLOGICAL STUDY OF CHILDREN IN BOARDING SCHOOLS: EXCERPTED SECTIONS. 19 Apr 62 [54]p. 17 refs. JPRS: 13522.
Order from OTS or SLA $5.60 62-24019

Trans. of mono. Psikhologicheskoe Izuchenie Detei v Shkole-Internata, Moscow, 1960, p. 3-51 and 201-208.

DESCRIPTORS: *Psychology, *Children, Behavior, Education, Training, Applied psychology, *Instructors, Personality tests, Measurement.

Contents:
Introduction
The psychological study of the child, and the individual approach to him in the education process
The utilization of teachers' evaluation as a means of accumulating knowledge about students
Conclusion
Bibliography.

Ponomarev, Ya. A., ed.
PSYCHOLOGICAL SCIENCE IN THE USSR, VOL. 2. 26 Feb 62, 960p. 447 refs. JPRS: 12798.
Order from OTS $9.00 62-11175

Trans. of mono. Psikhologicheskaya Nauka v SSSR, v. 2, Moscow, 1960, 656p.

DESCRIPTORS: *Psychology, *Personality, Nervous system, Attitudes, *Behavior, *Transfer of training, *Applied psychology, *Emotions, Learning, *Education, Children, Social communication, *Conditioned reflex, Memory, Adjustment (Psychology), *Industrial psychology, Reaction (Psychology), Labor, *Recreation, *Brain, Injuries, *Psychiatry, *Mental deficiency, *Deafness, *Blindness, Perception, *Sensory perception.

Contents:
Investigation of the properties of the nervous system as a path leading to the study of individual psychological differences, by B. M. Teplov
Problem of character in Soviet psychology, by V. A. Krutetskii
Individual differences in aptitudes, by N. S. Leites
Problems concerned with the self-awareness of the personality in Soviet psychology, by P. R. Chamata
Basic problems and present state of the psychology of human relations, by V. N. Myasishchev
General psychological theory of set, by A. S. Prangishvili
Experimental foundations of the theory of set of D. N. Uznadze, by R. G. Natadze
The problem of the psychology of emotions, by P. M. Yakobson
Study of the personality of school-children and problems of education, by L. I. Bozhovich
Some results of the study of the psychic development of children of pre-school age, by D. B. El'konin
The psychology of learning, by D. N. Bogoyavlenskii and N. A. Menchinskaya
Questions of the psychology of labor, by S. G. Gellershtein
The psychology of flight operations, by K. K. Platonov
The psychology of sport, by P. A. Rudik
Some problems of the psychology of sports competition, by A. Ts. Puni
Study of brain affections and the restoration of damaged functions, by A. R. Luriya
Experimental-psychological laboratories in psychiatric clinics in the Soviet Union, by B. V. Zeigarnik and S. Ya. Rubinshtein
Peculiarities of the mental development in students of auxiliary schools, by Zh. I. Shif
Problems of the psychology of the deaf-mute child, by I. M. Solov'ev
Characteristics of perceptional activity in the blind, by M. I. Zemtsova
Works of Soviet scholars in the field of comparative psychology, by N. N. Ladygina-Kots

The works of Soviet psychologists in the history of psychology, by M. V. Sokolov.
(See also 62-11083)

BIOLOGICAL SCIENCES

SOVIET LITERATURE ON LIFE SUPPORT SYSTEMS. Monthly rept. no. 5 on AID Work Assignment no. 22. [23]p. 13 refs. AID rept. 61-125 AD-263 670.
Order from OTS or SLA $2.60 61-28478

DESCRIPTORS: *Space medicine, Biology, Closed cycle ecological systems, Instrumentation, *Bibliography, Radiation sickness, Microwaves, Space flight, Radiation effects.

Contents:
Space medicine and biology
Space vehicle ecology
Instrumentation.

SOVIET LITERATURE ON LIFE SUPPORT SYSTEMS. Monthly rept. 4. 7 July 61 [23]p. 12 refs. AID rept. 61-109; AD-261 452.
Order from OTS or SLA $2.60 61-27742

DESCRIPTORS: *Space medicine, Closed cycle ecological systems, Psychology, Physiology, Biology, Metabolism, Hypothermia, Weightlessness, *Bibliography.

Contents:
Space medicine and biology
Space physiology
Space psychology
Space vehicle ecology.

SOVIET LITERATURE ON LIFE SUPPORT SYSTEMS. Monthly rept. 3. 31 May 61 [25]p. 10 refs. AID rept. 61-91; AD-260 427.
Order from OTS or SLA $2.60 61-27306

DESCRIPTORS: *Space medicine, Perception, Instrumentation, Bacteria, X-rays, Space flight, *Bibliography, Man, Radiation effects, Radiation injuries, Therapy, Hypothermia, Body temperature, Auditory perception, *Space environmental conditions, Stimulation, Light, Microwaves, Neuromuscular transmission, Sound, Tissues (Biology), Radio protective drugs, Cysteine.

Contents:
Space medicine and biology
Space physiology
Perceptual physiology
Instrumentation.

Banshchikov, V. M. and Tarasov, G. K.
TREATMENT OF CEREBROVASCULAR DISEASES WITH MENTAL DISORDERS WITH THE USE OF NEW DRUGS. 20 June 62 [49]p. 50 refs. JPRS: 14206.
Order from OTS or SLA $4.60 62-25505

Trans. of mono. (brochure) Lechenie Novymi Lekarstvennymi Sredstami Sosudistykh Zabolevanii Golovnogo Mozga s Psikhicheskimi Narusheniyami, Moscow, 1960, 37p.

DESCRIPTORS: Therapy, *Diseases, *Circulatory system, *Brain, *Psychoses, *Drugs, Hypertension, *Reserpine, Toxicity, Ganglia, Inhibition, *Arteriosclerosis, *Chlorpromazine, Plants, Spasms, *Glucosides, Blood coagulation, Electrosleep, Procaine, Vitamin P, Ascorbic acid, Yeasts, *Parkinsonism, Oxygen.

Contents:
Treatment of patients with essential hypertension and mental disorders
Changes in the mental conditions of patients with hypertension during reserpine treatment
Side effects from reserpine treatment, possible complications and aid for them
Contraindications to reserpine treatment
Treatment with ganglion-blocking agents
Treatment of patients with cerebral arteriosclerosis and mental disorders
Side-effects and complications from treatment with neuroleptic agents
Changes in the mental conditions of patients with cerebral arteriosclerosis during thorazine treatment
Treatment of patients with cerebral arteriosclerosis and mental disorders with saponins of dioscorea caucasica
Treatment with an antispasmodic; angiotrophin (padutin)
Treatment of vascular diseases with agents which delay blood coagulation
Electric sleep treatment of patients with cerebral arteriosclerosis with the agrypnic syndrome
Novocain treatment
Treatment with vitamins "C" and "P"
Treatment with brewer's yeast
Treatment of patients with cerebral arteriosclerosis and the Parkinson Syndrome with the use of artane
Treatment of patients with arterial hypotension with mental disorders
Oxygen therapy
Bibliography.

Sisakyan, N.
BIOLOGY AND THE CONQUEST OF SPACE. 10 May 62 [12]p. JPRS: 13708.
Order from OTS or SLA $1.60 62-24739

Trans. of Aviatsiya i Kosmonavtika (USSR) 1962 [v. 44] no. 2, p. 24-30.

DESCRIPTORS: *Space medicine, *Space flight, Radiation effects, Meteors, Microorganisms.

Sung, Hung-chao.
RESEARCH IN PHYSIOLOGICAL CONSTANTS IN OBSTERTRICS. 28 June 62 [15]p. JPRS: 14304.
Order from OTS or SLA $1.60 62-25517

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chia Hsia Chuan (Collection of [Theses] on Achievements [in] Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 316-322.

DESCRIPTORS: Physiology, Pregnancy, Measurement, *Bones, *Head, Infants, *Gynecology, China, Medical research.

Tank, L. I. and Samoilova, Z. T.
THE SECTIONS OF PHARMACOLOGY AND TOXICOLOGY OF THE LENINGRAD SOCIETY OF PHYSIOLOGISTS, BIOCHEMISTS, AND PHARMACOLOGISTS IMENI I. M. SECHENOV [AND] THE MOSCOW PHARMACOLOGIC OF THE MOSCOW PHYSIOLOGICAL SOCIETY. 11 Apr 62 [11]p. JPRS: 13417.
Order from OTS or SLA $1.60 62-24008

Trans. of Farmakologiya i Toksikologiya (USSR) 1961, v. 24, no. 5, p. 635-638.

DESCRIPTORS: Conferences, Scientific reports, *Scientific organizations, Pharmacology, Physiology, Biochemistry.

Anatomy and Physiology

SOME INSTRUMENTAL METHODS OF EVALUATING THE ATHLETIC TRAINING CONDITION. 21 June 62 [16]p. 14 refs. JPRS: 14218.
Order from OTS or SLA $1.60 62-25474

Trans. of Teoriya i Praktika Fizicheskoi Kul'tury (USSR) 1961, v. 24, no. 4, p. 291-297.

DESCRIPTORS: Physical fitness, Training, *Exercise, *Motor reactions, Kymography, Shivering, Nervous system, Remote control systems.

Contents:
Portable remote control apparatus for the motor-reflex method, by B. A. Ashmarin and L. D. Kudryavtsev
Tremography as a method of evaluating the functional condition of the athlete's nervous system, by V. A. Safonov.

Bein, H. J.
PHYSIOLOGICAL BASES ON MENTAL PROCESSES (Physiologische Grundlagen Psychischer Vorgänge). [1962] 12p.
Order from SLA $1.60 62-16070

Trans. of Naturwiss[enschaftliche] Rundschau (West Germany) 1960, v. 13 [no. 10] p. 383-388.

DESCRIPTORS: *Physiology, *Psychology, Nervous system, Sensory perception, *Brain, Stimulation, Neuromuscular transmissions, *Memory, Cerebral cortex

The pure reflex dogma held in the first quarter of this century which considered the central nervous system to be a switchboard with specific centers was too simple. We have functional circles which influence each other continuously and a central modulation of the peripheral sensory perceptions. All neurophysiological and psychological studies suggest that central nervous processes which seem to be simple require wide areas of the whole brain. The brain is not only an agglomeration of individual parts, but an organ which functions in its totality. This integration organ is kept active only by the continuous influx of stimuli perceived by the interior of the body as well as by the external world. (Author)

Dautrebande, L.
EXPERIMENTAL PNEUMOCONSTRICTION AND PNEUMODILATION. [1962] 20p.
Order from K-H $25.00 K-H 6871-a

Trans. of Revue Médicale de Nancy (France) 1957 [v. 82, July, p. 743-755].

DESCRIPTORS: *Respiratory system, *Dilation, *Constriction.

Karkalitskii, I. M.
EFFECT OF DIPHASINE AND PENTAPHENE ON THE OXYDIZING-RESTORING PROCESSES IN THE DIFFERENT TISSUES OF ANIMAL ORGANISM. [1962] [8]p. 3 refs.
Order from OTS or SLA $1.10 62-14726

Trans. of #Farm[akologiya] i Toks[ikologiya] (USSR) 1960, v. 23, no. 1, p. 64-66.

DESCRIPTORS: Drugs, *Vasomotor drugs, *Caramiphen, *Tissues (Biology), Oxidation, *Respiration, Cytochromes, Dehydrogenases.

Application of diphasine and pentaphene in experiments on rabbits indicated a depression of cytochrome oxydase activity in the cortex, sub-cortex, brain stem, as well as liver, kidneys, and heart. Diphasine increases the succine dehydrase activity in the given parts of the brain and tissues while pentaphene increasing the activity of succinedehydrase in the subcortex, stem, liver, and kidneys barely acts on the succine-dehydrase of the cortex and heart. Oxygen consumption in white rats after administration of diphasine decreases by 13.6 to 31.6% (as compared with oxygen consumption prior to administration of the given preparation). (Author)

Koiranskii, B. B., Ukvol'berg. L. Ya. and others.
THE PROBLEM OF THE EFFECT OF AEROIONIZATION ON THE EFFICIENCY OF A HEALTHY PERSON. 19 Feb 62 [11]p. 13 refs. JPRS: 12649.
Order from OTS or SLA $1.60 62-19762
Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1961, v. 5, no. 10, p. 13-19.

DESCRIPTORS: *Ions, Respiration, Physical fitness, *Fatigue (Physiology), Conditioned reflex, *Aerosols.

It was found that under conditions marked by a prolonged strain of the work the efficiency is influenced by the conditional reflex, stereo-type of the environement and physical exercise. Under the effect of negative aeroion inhalation the central nervous system becomes subject to a depression, which is distinctly manifest in an intellectual type of work. Aeroion inhalation for 30 minutes prior to the performance of any work, with their concentrations in the air amounting to 100 thousand and 1 million per 1 cm^3 fails to influence in any way the rise of efficiency, both during performance of physical and intellectual work. (Author)

Moynier, R., Guiot, G., and Pluven, J.
NEW PROCEDURE FOR MEASURING THE ELECTRIC NEUROMUSCULAR EXCITABILITY: APPLICATION TO THE STUDY OF FATIGUE. [1962] 12p. (6 figs. omitted).
Order from SLA $1.60 62-14574

Trans. of Soc[iété] de Med[ecine] Milit[aire] Franç[aise]. [Bulletin Mensuel] 1955 [v. 49] 21 May, p. 119-126.

DESCRIPTORS: *Medical equipment, Measurement, *Neuromuscular transmission, Bioelectronics, *Excitation, Muscles, Nerves, *Fatigue (Physiology).

Neveu, N.
THE EUSTACHIAN TUBE (La Trompe d'Eustache) tr. by Tatiana Boldyreff. 8 Mar 60, 38p.
Order from OTS or SLA $3.60 60-15724

Trans. of Annales d'Oto-Laryngologie (France) 1959, v. 76, no. 4/5, p. 366-390.

DESCRIPTORS: *Ear, *Anatomy, Muscles, *Otorhinolaryngology, Pathology, Congenital anomalies, Allergy, Therapy

Wierdis and Palazzetti.
EXPERIMENTAL STUDIES ON THE INFLUENCE OF DIENCEPHALIC-HYPOPHYSEAL LUMINOUS STRESS DURING THE MENSTRUAL CYCLE. [1961] 6p. 8 refs.
Order from SLA $1.10 62-14095

Trans. of Società Italiana di Biologia Sperimentale. Bollettino, 1960, v. 36, no. 8, p. 379-383.

DESCRIPTORS: *Brain, *Stress (Physiology) *Reproductive system, *Hormones, Steroids, Pregnandiols, Estrogens, Glycogen.

The study was made to establish the possible variations of the functional cycle, related to the modifications of the neuro-secretory phenomena in the central zones with biological effects produced by intermittent diencephalic hypophyseal luminous stress. (Author)

Biochemistry

Bader, F.
THE ULTRAVIOLET ABSORPTION OF PHYTOL AND OTHER TERPENE ALCOHOLS. [1962] 5p.
Order from K-H $6.25 K-H 5226-b

Trans. of Helvetica Chimica Acta (Switzerland) 1951, v. 34, p. 1632-1634.

DESCRIPTORS: *Ultraviolet radiation, *Absorption, *Terpenes, *Alcohols.

Blyumenfel'd, L. A.
THE MAGNETIC AND ELECTRICAL PROPERTIES OF MACROMOLECULES. 6 Feb 62 [10]p. 1 ref.
JPRS: 12342.
Order from OTS or SLA $1.10 62-15934

Trans. of Priroda (USSR) 1961, v. 50, no. 2, p. 55-59.

DESCRIPTORS: *Molecules, Polymers, *Proteins, *Nucleic acids, *Serum, *Albumins, Nucleoproteins, Magnetic properties, Electrical properties, *Paramagnetic resonance, Resonance, Radiation effects.

When the electronic paramagnetic resonance (EPR) spectra of artifically prepared complexes of ribonucleic acid (RNA) with two types of protein (serum and egg albumin) were traced after ionizing irradiation, the pen of the automatic recorder did not return to zero. By sharply increasing the interval of the permeable magnetic field it was seen that the narrow radiation signal was on a background of an EPR signal 600 to 1000 oersteds wide with an immense total intensity. Preliminary tests suggested that there are 10^{21} to 10^{22} unpaired electrons per gram of substance, which would mean up to 5 unpaired electrons for each monomeric link of the polymers. On the basis of form, breadth, and temperature dependence the EPR signals do not resemble the EPR spectra of free radicals, metallic ions of transitional groups or other ordinary paramagnetics. Their curve of magnetizability is characterized by saturation in relatively weak magnetic fields, suggestive of ferromagnetic materials except that no residual magnetism occurs. This "pseudoferromagnetic" effect is purely structural. A disturbance of the natural ordering of the structure of nucleic acids by heating in solution or by hydrochloric acid leads to a corresponding decrease in pseudoferromagnetism. Analogous magnetic properties were detected in a number of synthetic polymers having molecular planes that are packed in a regular order in layers. The magnetic properties of a unicellular culture of yeast were found to change in a regular way during its growth and cell division.

Marova, M. Ya., Voronkov, M. G., and Dolgov, B. N.
INSECTO-FUNGICIDAL ACTION OF ORGANIC, SILICOORGANIC, AND INORGANIC ISOTHIOCYANATES. Aug 57, 5p. 4 refs.
Order from OTS or SLA $1.10 62-14046

Trans. of Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1957, v. 30, no. 4, p. 650-652.

DESCRIPTORS: *Insecticides, *Fungicides, *Bactericides, *Thiocyanates, *Silicon compounds, Insects, Fungi, Bacteria.

It is shown that the polythiocyanatoalkanes (dithiocyanatomethane, 1, 2- dithiocyanatoethane, and 1, 2, 3-trithiocyanatopropane) possess a very effective fungicidal and bactericidal action. Certain alkyliso-thiocyanatosilanes also possess a marked insecto-fungicidal action.

Mashkovtesev, M. G. and Sirotenko, A. A.
ON THE FILTERING CAPACITY OF CIGARETTE FILTERS. [1962] 6p.
Order from K-H $7.50 K-H 11071-c

Trans. of Tabak (USSR) 1959, v. 20, no. 4, p. 25-27.

DESCRIPTORS: *Porous filters, *Cigarettes, Filter paper, Effectiveness

Sirchis, Jean and Duranton, Jacques.
DIFFERENT KINDS OF CHROMOPROTEIN EXTRACTED FROM TOBACCO CHLOROPLASTS (Differentes Especes de Chromoproteine Extraites de Chloroplastes de Tabac). [1962] [4]p. 10 refs.
Order from SLA $1.10 62-10922

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1959 [v. 248] no. 17, p. 2528-2530 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Plants, *Tobacco, Pigments, *Chlorophylls, Proteins, *Fractionation, Spectrographic analysis.

We isolate a chromoprotein complex from tobacco chloroplasts which can be separated into two fractions differing in their chemical composition and their rate of sedimentation. (Author)

General Biology

Dragavtsev, V. A.
PHILOSOPHICAL PROBLEMS OF THE TEACHING OF FORM-DEVELOPMENT AND THEORY OF HEREDITARY INFORMATION. 1 Mar 62 [22]p. 27 refs. JPRS: 12751.
Order from OTS or SLA $2.60 62-23333

Trans. of #Uspekhi Sovremennoi Biologii (USSR) 1961, v. 52, no. 3(6) p. 347-361.

DESCRIPTORS: *Philosophy, *Genetics, Growth, Entropy, Plants.

The basic rules of form-creating processes within populations admit modelling within the frame of the second law of thermodynamics. Hereditary information equals zero. Senescence is an accumulation of information from without. The specificity of taxonomic categories is determined by the least informed structures. The necessity of a stabilizing selection is identical with the necessity of the increase of entropy of a given system left to its own devices. The rejuvenation effect illustrates the various degrees of isolation of structures (individuation) from ecological information. (Author)

Troshin, A. S.. Paribok, V. P., and Krolenko, S. A.
APPLIED CYTOLOGY. 18 Apr 62 [10]p. JPRS: 13487.
Order from OTS or SLA $1.10 62-23993

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1962, v. 27, no. 1, p. 127-130.

DESCRIPTORS: *Histology, Cells (Biology), Biology, Cancer, Nervous system.

Microbiology

Gralheer, Heinz.
ON A SPECIFIC PRECIPITATING POLYSACCHARIDE OF ERYSIPELOTHRIX RHUSIOPATHIAE. [1962] [3]p.
Order from SLA $1.10 62-14774

Trans. from photocopy of [Archiv für Experimentelle Veterinärmedizin] (East Germany) 1951, v. 3, no. 3, p. 65-68.

DESCRIPTORS: *Streptococcus, *Bacterial vaccines, Precipitation, Glucosides, *Antigens, Heptanes, Immunology.

Kalinenko, V. O. and Mefedova, N. A.
BACTERIAL FOULING OF UNDERWATER PARTS OF SHIPS. [1961] 8p. (2 Eng. refs. 7 figs. omitted) 16 refs.
Order from OTS or SLA $1.10 62-10583

Trans. from Mikrobiologiya (USSR) [1956] v. 25, no. 2 [p. 191-194].

DESCRIPTORS: *Bacteria, Aquatic animals, *Ships, *Fouling, Antifouling coatings, *Paints.

The problem of the correlation of bacteria and zoo-organisms of fouling is explained by studying glass tinted with toxic paints and immersed in tanks of circulating water and in water of a sea harbor. All the paints used now as anti-corrosive and anti-biological coatings are not toxic for marine bacteria. In the first 24 hours microorganisms fastened to the painted surface, intensively multiply on it and cover the paint with a continuous albumin-mucous film, incrusted with calcites, ferrites and magnesites. Zoo-organisms fastened to the paint only after the formation of bacterial-albumin-mucous film which blocks the toxic surface of the paints. Bacterial method can be applied for the economic and fast determination and selection of the most toxic paint from the newly developed paints. (Author)

Khoroshanskaya, D. I.
A STUDY OF AIR MICROFLORA IN ODESSA (Issledovanie Mikroflory Vozdukha Odessy) tr. by H. H. 18 May 62, 7p. I-0917.
Order from OTS $0.50 62-11691

Trans. of [Gigiena i Sanitariya] (USSR) 1941, v. 1, p. 28-34.

DESCRIPTORS: *Air, *Microorganisms, Particles, Bacteria, *Temperature, Climatic factors, Urban areas, Rural areas, Diseases, *Public health, *Bacterial aerosols, *Health resorts.

Kordyum, V. A.
SIMPLE METHOD FOR THE CONTINUOUS CULTURE OF MICRO-ORGANISMS UNDER STATIONARY CONDITIONS. 19 Feb 62 [8]p. JPRS: 12547.
Order from OTS or SLA $1.10 62-19163

Trans. of Mikrobiologichnyi Zhurnal (USSR) 1961, v. 23, no. 2, p. 73-75.

DESCRIPTORS: *Microorganisms, Growth, *Culture media, *Laboratory equipment

Sergeeva, N. M.
THE PROBLEM OF SELECTING THE DESIGN OF A FERMENTOR FOR THE IN-DEPTH CULTIVATION OF MOLD FUNGI. 29 Mar 62, 10p. I-0930; JPRS (R-2213-D).
Order from OTS $0.50 62-11693

Trans. of Russian mono. K Voprosu Vybora Konstruktsii Fermentatora dlya Glubinnogo Vyrashchivaniya Plesnevykh Gribov, n. p., n. d., p. 8-13.

DESCRIPTORS: *Molds, *Fungi, *Fermentation, Respiration, Culture media.

Vershigora, A. Yu.
MICROBIOLOGICAL METHODS OF TESTING THE ATMOSPHERE. 16 Feb 62 [134]p. 142 refs. JPRS: 12581.
Order from OTS or SLA $10.50 62-19777

Trans. of mono. Metody Mikrobiologichnykh Doslidzhen' Povitrya, Kiev, 1960, 133p.

DESCRIPTORS: *Air, *Contamination, Bacteria, *Aerosols, *Instrumentation, Electronic equipment, Interception, Bubble chambers, Sanitary engineering

This book presents brief information on bacterial aerosols and methods of conducting experiments with them. It contains exact descriptions of new instruments used for bacteriological testing of the atmosphere, methods of using them and evaluating instruments that are widely applied in practice. A succinct exposition is given of the basic rules employed in the methodology of bacteriological testing of the air in closed spaces as well as outdoors. This book is intended for physicians, microbiologists, hygienic specialists and other scientists who are interested in the problems related to air-borne infection and bacterial contamination of the atmosphere. (Soviet publisher's note)

Vlodavets, V. V., Zuikova, E. Yu. and others.
THE USE OF A NEW TYPE OF FILTER "MIKROFIL" FOR THE CONCENTRATION AND RECOVERY OF BACTERIA FROM AIR, WATER, AND SOIL. 14 May 62 [9]p. 13 refs. JPRS: 13741
Order from OTS or SLA $1.10 62-24745

Trans. of Gigiena i Sanitariya (USSR) 1962, v. 27, no. 3, p. 51-55.

DESCRIPTORS: *Porous filters, Bacteria, *Water, *Soils, *Air, Laboratory equipment, *Bacterial aerosols, Strainers, *Particulate filters.

Zuikova, E. Yu.
FILTRATION AS A METHOD OF RIDDING THE AIR OF GERMS (Filtratsiya kak Metod Ochistki Vozdukha ot Mikrobov) tr. by G. C. 18 May 62, 4p. 12 refs. I-1367.
Order from OTS $0.50 62-11692

Trans. of Gigiena i Sanitariya (USSR) 1959 [v. 24] no. 6, p. 72-73.
Another trans. is available from OTS or SLA $1.10 as 61-19644, 1 Mar 61, 6p.

DESCRIPTORS: *Air *Bacterial aerosols, *Strainers, *Purification, *Particulate filters.

The effectiveness of the FP-5 and the diaphragm-type filters were compared with respect to their ability to remove natural microflora and bacterial aerosols from the air. Both types of filters were extremely efficient: retentivity of microorganisms was almost 100% with each type. The FP type was somewhat more convenient and easier to use for speedy filtrations of large volumes of air.

Pathology

COMPARATIVE TEST OF TOBACCO-SMOKE CONDENSATES: BENZOPYRENE AND TOBACCO EXTRACT FOR CARCINOGENIC ACTION IN RATS. [1962].
Order from K-H $7.50 K-H 10843-a

Trans. of Naturwissenschaften (West Germany) 1960, v. 47, no. 24, p. 605-606.

DESCRIPTORS: *Tobacco, Smokes, Condensation, *Benzopyrenes, *Cancer, Rats.

EXAMINATION OF OVARIAN FUNCTION AND ITS SIGNIFICANCE. 28 June 62 [19]p. 6 refs. JPRS:14305.
Order from OTS or SLA $1.60 62-25531

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 322-330.

DESCRIPTORS: *Ovary, Physiology, Pathology, Diagnosis, Reproductive system, Therapy, China, Medical research.

PATHOLOGIC PHYSIOLOGY AND EXPERIMENTAL THERAPY, 1962, VOL. 6, NO. 1: SELECTED ARTICLES. 26 Apr 62 [57]p. 78 refs. JPRS: 13573.
Order from OTS or SLA $5.60 62-24248

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1962, v. 6, no. 1, p. 28-33, 37-42, 49-53, 70-85.

DESCRIPTORS: *Hibernation, *Clinical death, *Hypothermia, *Hemorrhage, Physiology, *Burns, Blood, *Hemopoiesis, Resistance, Animals, Muscles, Training, Heat, Secretion, *Pancreas, *Radiation effects, Skin, Inflammation, Electrophoresis, Antibodies, *Hypersensitivity, Bibliography, *Dibasol.

Contents:
The effect of general chilling and hibernation on the restoration of vital functions of animals subjected to clinical death resulting from acute blood loss, by V. Soboleva
The problem of the mechanism of change in hematopoiesis in thermal burns, by V. S. Barkaya
State of nonspecifically increased resistance in animals from muscular training and training with the simultaneous administration of dibazole, by V. Ya. Rusin
New possibilities of increasing heat resistance of the body in the light of experimental data, by F. T. Agarkov
Secretory function of the pancreas in radiation, by K. V. Smirnov and M. F. Nesterin
Characteristics of the reactivity and resistance to additional influences during different periods of burn sickness, by E. V. Gubler and others
Hydrophilic skin test in experimental hyperergic inflammation in rabbits, by M. E. Agrinskii
Electrophoretic study of burn antisera, by M. Z. Rudnitskaya and S. V. Skurkovich.

Barbano, G., Barcelli, C., and Matteis, F. de.
ELECTROCARDIOGRAPHIC CHANGES FOLLOWING TOBACCO SMOKING: NORMAL SUBJECTS, PATIENTS WITH DYSTONIC AND CORONARY DISORDERS. [1962] 3p.
Order from K-H $4.00 K-H 8619-a

Trans. of Soc[ietà] Ital[iana di] Cardiol[ogia]. Atti, 1954, v. 16, p. 105-107.

DESCRIPTORS: *Tobacco, *Cigarettes, Electrocardiography, *Diseases, *Heart, *Blood vessels.

Barry, D. T.
SIGNIFICANCE OF THE CHANGES IN THE CARDIAC RHYTHM PRODUCED BY PERFUSION WITH NICOTINE. [1962] 13p.
Order from K-H $16.00 K-H 5389-a

Trans. of Arch[ives] Intern[ationales] de Pharmacodyn[amie] et de Thérapie (Belgium) 1919/1921, v. 25, p. 391-401.

DESCRIPTORS: *Heart, *Rhythm, Reaction (Psychology), *Nicotine.

Bartha, F., Jeney, E. and others.
STUDY ON HYGIENIC CONDITIONS AT THE TOBACCO PLANT AND NICOTINE ESTABLISHMENT IN DUBRECEN: CONTROL OF DUST AND NICOTINE POISONING. [1962] 16p.
Order from K-H $20.00 K-H 3384-a

Trans. of Nepegeszsegugy (Hungary) 1954, v. 35, no. 7, p. 182-187.

DESCRIPTORS: *Public health, *Tobacco, Industry, *Nicotine, Particles, *Poisoning, Control, Industrial medicine.

Barthe, R., Paris, J. and others.
VALUE AND INTERPRETATION OF BLOOD CARBON MONOXIDE RATES OBTAINED BY THE NICLOUX-EUDIOMETRIC METHOD. II. SMOKERS AND ALCOHOLICS. [1962] 2p.
Order from K-H $2.50 K-H 2923-a

Trans. of Arch[ives des] Mal[adies] Prof[essionnelles de] Med[écine du] Trav[ail et de] Sec[urité] Sociale (France) 1953, v. 14, no. 3, p. 288-290.

DESCRIPTORS: *Blood chemistry, *Carbon monoxide indicators, Cigarettes, *Tobacco, *Alcoholism.

Bartosiewicz, G.
SEVERE POISONING WITH NICOTINE VAPORS. [1962] 5p.
Order from K-H $6.25 K-H 3759-b

Trans. of Orv[osi] Hetil[ap] (Hungary) 1955, v. 96, no. 8, p. 22-23.

DESCRIPTORS: *Nicotine, Vapors, Poisoning.

Beaulieu, Maurice.
LUNG CANCER. [1962] 8p.
Order from K-H $10.00 K-H 11279-h

Trans. of Laval Medical (Canada) 1961, v. 31, no. 5, p. [604]-610.

DESCRIPTORS: *Lungs, *Cancer.

Beneke, R.
SPECIFIC VASCULAR DISEASES IN SYPHILIS AND IN NICOTINE POISONING. [1962] 31p.
Order from K-H $38.75 K-H 3367-a

Trans. of Münchener Medizinische Wochenschrift (Germany) 1919, v. 66, no. 51, p. 1463-1467.

DESCRIPTORS: *Blood vessels, *Diseases, *Venereal diseases, *Nicotine, *Poisoning.

Berard, J. and Delore, J.
BRONCHIAL CANCER AND TOBACCO. [1962] 5p.
Order from K-H $6.00 K-H 3359-b

Trans. of Jour[nal] Franç[aise de] Méd[ecine et] Chir[urgie] Thorac[iques] 1954, v. 8, no. 3, p. 306-309.

DESCRIPTORS: *Cancer, *Tobacco, *Respiratory system, Cancer research.

Berard, Jacques and Bouvet, Roger.
IN A YEAR ... IN A MONTH ... (REFLECTIONS ON BRONCHIAL CANCER). Feb 61, 20p.
Order from K-H $25.00 K-H 10643-a

Trans. of J[ournal de] Médecine de Lyon (France) 1959 [v. 40] no. 955, p. 987-997.

DESCRIPTORS: *Cancer, Cancer research, *Respiratory system.

Berfenstam, Ragnar and Bille, Bo S. V.
SMOKING DURING PREGNANCY AND THE NURSING PERIOD: SOME POINTS OF VIEW ON A QUESTION OF CURRENT INTEREST. [1962] 9p.
Order from K-H $11.25 K-H 9531

Trans. of Nordisk Medicin (Sweden) 1959, v. 62, 27 Aug, p. 1294-1296.

DESCRIPTORS: *Smokes, *Pregnancy, *Feeding, *Infants, *Cigarettes.

Bergqvist, Sven.
TOBACCO SMOKING AND LUNG CANCER. [1962] 11p.
Order from K-H $13.75 K-H 9955

Trans. of Svensk[a] Läk[ar]tidn[ingen] 1959, v. 56, no. 26, p. 1843-1851.

DESCRIPTORS: *Lungs, Cancer, *Tobacco, Smokes

Bickel, G. and Rentchnick, P.
EARLY DIAGNOSIS OF PRIMARY PULMONARY CANCER. Sep 60, 19p.
Order from K-H $23.75 K-H 10177-b

Trans. of Revue Médicale de la Suisse Romande (Switzerland) 1952, v. 72, p. 27-44.

DESCRIPTORS: *Lungs, *Cancer, Diagnosis.

Bietti, G. B. and Cima, V.
EXPERIMENTAL INVESTIGATIONS ON THE ROLE OF HYPOPHYSIS IN RISE OF EYE PRESSURE PRODUCED BY DOSES OF NICOTINE AND WATER. [1962] 9p.
Order from K-H $11.25 K-H 3381-a

Trans. of Klin[ische] Monatsblätter für Augenheilkunde (West Germany) 1954, v. 124, p. 386-392.

DESCRIPTORS: *Eye, *Pressure, Dosage, *Nicotine, *Water, *Pituitary gland, Physiology.

Blümlein, H.
ETIOLOGY OF LARYNGEAL CARCINOMA. [1962] 10p.
Order from K-H $12.50 K-H 8817-a

Trans. of der Krebsarzt (Austria) 1958, v. 13, no. 7, p. 322-330.

DESCRIPTORS: *Larynx, *Cancer, Etiology.

Bohnenkamp, H.
CONTRIBUTION TO THE EXOGENOUS CAUSES OF LUNG CANCER ON THE BASIS OF A CASE OF PROBABLE ARSENIC CANCER. [1962] 8p.
Order from K-H $10.00 K-H 8500-a

Trans. of der Krebsarzt (Austria) 1958, v. 13, no. 7, p. 318-322.

DESCRIPTORS: *Lungs, *Cancer, *Arsenic, Cancer research.

Bornemann and Hackrein.
THE PROBLEM OF NICOTINE IN CASE OF CIRCULATORY DISEASES OF THE HEART. [1962] 10p.
Order from K-H $12.00 K-H 3779-b

Trans. of Medizinische Klinik (West Germany) 1955, v. 50, p. 869ff.

DESCRIPTORS: *Nicotine, *Circulatory system, *Diseases, *Heart, Blood circulation.

Brosch, Anton.
THEORETICAL AND EXPERIMENTAL INVESTIGATIONS ON THE PATHOGENESIS AND HISTOGENESIS OF MALIGNANT TUMORS. [1962] 60p.
Order from K-H $75.00 K-H 9249-d

Trans. of Virchow's Arch[iv für] Path[ologische] Anat[omie und Physiologie und Klinische Medizin (Germany) 1900, v. 162, p. 32-84.

DESCRIPTORS: *Tumors, *Cancer.

Budernik, A.
PROPHYLAXIS OF LUNG CANCER. [1962] 6p.
Order from K-H $7.50 K-H 11279-f

Trans. of Wiener Klinische Wochenschrift (Austria) 1961, v. 73, no. 14, p. 247-248.

DESCRIPTORS: *Lungs, *Cancer, Therapy.

Bungeler.
BRONCHIAL CARCINOMA. [1962] 24p.
Order from K-H $30.00 K-H 5322-a

Trans. of [die Medizinische Welt] (West Germany) 1955, 21 May, p. 776-782.

DESCRIPTORS: *Cancer, *Respiratory system.

Busse, W. and Lendle, L.
NICOTINE ADDICTION AND SIDE EFFECTS OF NICOTINE IN SMOKING. [1962] 13p.
Order from K-H $16.25 K-H 3199-a

Trans. of [die Medizinische Welt] (West Germany) 1954, no. 17, p. 593-595.

DESCRIPTORS: *Nicotine, Smokes, Physiology.

Candeli, A., Lindsey, A. J., and Persaud, K.
CIGARETTE PAPER WITH AMMONIUM SULFAMATE AND CANCERIGENIC HYDROCARBONS. [1962] 6p.
Order from K-H $7.45 K-H 10481-a

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. B[ollettino] 1960, v. 36, no. 10, p. 452-454.

DESCRIPTORS: *Cigarettes, *Paper, Ammonium radicals, *Sulfamates, *Smokes, Hydrocarbons, *Cancer.

Caussade, L., Neimann, N., and Pierson, M.
NICOTINE POISONING IN AN INFANT. [1962] 8p.
Order from K-H $10.00 K-H 3199-b

Trans. of Revue Médicale de Nancy (France) 1954, v. 79, p. 173-178.

DESCRIPTORS: Infants, *Nicotine, *Poisoning.

Chia, K'e-ming.
INFECTIOUS HEPATITIS. 13 July 62 [12]p. 29 refs. JPRS: 14457.
Order from OTS or SLA $1.60 62-32001

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in the Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 106-110.

DESCRIPTORS: *Hepatitis, *Virus diseases, Epidemiology, *Diagnosis, Pathology, Etiology.

Chu, Chi-ming,
RESEARCH ON INFLUENZA. 16 July 62 [24]p. 36 refs. JPRS: 14478.
Order from OTS or SLA $2.60 62-32004

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in the Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 88-96.

DESCRIPTORS: *Virus diseases, *Influenza viruses, Epidemiology, Etiology, Immunology, Influenza vaccines, Antigens, *Diagnosis, Inhibition, *Therapy, Chinese traditional medicine, Drugs, Plants.

Chung, Ch'ien Hsin.
GENERAL ACCOUNT OF SCIENTIFIC TECHNIQUE ON THE PREVENTION AND THERAPEUTICS OF THE FIVE PRINCIPAL PARASITIC DISEASES IN OUR COUNTRY. 1 Feb 62, 230p. H-8076 A-B.
Order from OTS $3.50 62-11600

Trans. of mono. Tsung Chieh Chun Chung Hsing Te Hsüeh Shu Ching Yen, Wei Hsun Su Hsiao Mieh Wu T'a Chi Sheng Ch'ung Ping Erh Hsun Tou, Shanghai, 1959, 194p.

DESCRIPTORS: *Parasitic infections, *China, *Malaria, *Filariasis, *Leishmaniasis, *Trematodes, *Schistosomiasis, Disease carriers, Nematodes, Countermeasures, Therapy, *Insect control.

Clemmesen, J. and Nielsen, A.
NATIONAL CIGARETTE CONSUMPTION AND LUNG CANCER. [1962] 3p.
Order from K-H $3.75 K-H 3390-a

Trans. of Ugeskrift for Laeger (Denmark) 1954, v. 116, p. 1294-1295.

DESCRIPTORS: *Lungs, *Cancer, *Cigarettes,

Conti, A. and Negro, G.
CONSIDERATIONS ON THE RELATIONSHIP BETWEEN CIGARETTE SMOKE AND LUNG CANCER. [1962] 14p.
Order from K-H $17.50 K-H 11095-c

Trans. of Minerva Med[ica] (Italy) 1961, v. 52, p. 631-634.

DESCRIPTORS: *Cigarettes, *Smokes, *Lungs, *Cancer, Cancer research.

Courey, B. and Denefle, J. P.
PARAFFIN OIL: VECTOR AGENT OF TOBACCO TARS IN THEIR ACTION ON THE GROWTH OF PULMONARY FIBROBLASTS. [1962] 15p.
Order from K-H $18.75 K-H 11363-a

Trans. of Pathologie et Biologie (France) 1961, v. 9, no. 7/8, p. 825-830.

DESCRIPTORS: Hydrocarbons, Oils, *Disease carriers, *Tobacco, Growth, *Lungs, *Tissues (Biology).

Coutinho, A.
SOME ASPECTS OF THE INCIDENCE AND PROPHYLAXIS OF TOBACCOISM AND ALCOHOLISM AMONG 1226 WORKERS. [1962] 7p.
Order from K-H $21.25 K-H 3449-a

Trans. of Revista Brasileira de Medicina, 1954, v. 11, no. 9, p. 633-635.

DESCRIPTORS: *Tobacco, *Alcoholism, Labor, Personnel, Preventive medicine.

Covello, Lucio and Serra, Carlo.
THE INFLUENCE OF SMOKING ON THE MUSCULAR ACTION POTENTIAL IN CASES OF ARTERIOPATHY. [1962] 24p.
Order from K-H $30.00 K-H 8973-a

Trans. of [Giornale Italiano di Chirurgia] 1958, v. 14, no. 8, p. 691-711.

DESCRIPTORS: *Cigarettes, *Tobacco, *Muscles, *Arteries, *Diseases, Toxicity.

Deelman, H. T.
CLINICAL LESSONS: VIEWS ON CARCINOMA OF THE LUNG. [1962] 11p.
Order from K-H $13.75 K-H 8003-a

Trans. of Nederlands Tijdschrift voor Geneeskunde, 1952, v. 96, 2 Aug, p. 1850-1855.

DESCRIPTORS: *Cancer, *Lungs, Pathology, Cancer research.

Dittrich, P. v.
THERAPY OF EXOGENOUS INTOXICATIONS WITH EXTRACORPORAL HEMODIALYSIS (Behandlung Exogener Vergiftungen mit der Extrakorporalen Hämodialyse). [1962] 7p. 18 refs.
Order from SLA $1.10 62-16081

Trans. of Münch[ener] Med[izinische] W[ochen]schr[ift] (West Germany) 1961, v. 103, 24 Nov, p. 2339-2341.

DESCRIPTORS: *Poisons, Drugs, *Therapy, *Artificial kidney, Glutaric acids, Amides, Barbiturates.

On the basis of literature and 2 personal experiences of Doriden poisonings a review is given about the possibilities and the results of extracorporeal hemodialysis in exogenous poisonings without renal insufficiency. (Author)

Dormanns, E.
THE INCREASE IN THE INCIDENCE OF CANCER WITH SPECIAL CONSIDERATION OF CANCER OF THE LUNGS. [1962] 17p.
Order from K-H $21.25 K-H 6918-d

Trans. of Schweiz[erische] Z[eitschrift für] Allgem[eine] Path[ologie] u[nd] Bakt[eriologie] 1955, v. 18, p. 907-918.

DESCRIPTORS: *Lungs, *Cancer.

Forsgren, E.
NICOTINE POISONING AND LITERARY ANGUISH. [1962] 7p.
Order from K-H $8.75 K-H 9372-d

Trans. of Svenska Läkartidningen, 1959, v. 56, p. 983-986.

DESCRIPTORS: *Nicotine, *Poisoning.

Frankel, W. K.
CIGARETTES AND LUNG CANCER. [1962] 10p.
Order from K-H $12.50 K-H 2070

Trans. of [die] Med[izinische Welt] (West Germany) 1955, no. 5, p. 192-194.

DESCRIPTORS: *Cigarettes, *Lungs, *Cancer, Cancer research.

Fusari, G.
CONCERNING THE STATISTICAL RELATION BETWEEN TOBACCO SMOKE AND LARYNGEAL CANCER. [1962] 6p.
Order from K-H $7.50 K-H 6821-a

Trans. of Bollettino delle Malattie dell'Orecchio della Gola e del Naso (Italy) 1957 [v. 75] no. 2, p. 175-179.

DESCRIPTORS: *Tobacco, Smokes, *Larynx, *Cancer, Cancer research.

Kallinikova, O. N. and Morozenko, M. A.
THE PARTICIPATION OF PARAINFLUENZAL VIRUSES IN THE DEVELOPMENT OF RESPIRATORY DISEASES IN CHILDREN UNDER TWO YEARS (Uchastie Paragrippoznykh Virusov v Vozniknovenii Zabolevanii Dykhatel'nykh Putei u Detei do 2 Let). 26 Mar 62 [11]p. 9 refs. NIH no. 3-78-62.
Order from OTS or SLA $1.60 62-23868

Trans. of Pediatriya (USSR) 1961, v. 40, no. 4, p. 29-34.

DESCRIPTORS: *Influenza viruses, *Diseases, *Respiratory system, *Children, Diagnosis, Antibodies, Serum.

There appeared a great contagiosity of the acute infections of the respiratory tract caused by parainfluenzal virus I (HAII). The clinical picture of the infection was diverse. The respiratory organs were most often affected. In the majority of cases, pneumonia of the interstitial type ensued. In a virological study of 40 sick children involving tissue cultures of the kidney of monkeys and that of the human embryo, 12 strains of parainfluenzal virus I (HAII) were isolated. A serological study of fresh serums taken in the acute stage and period of convalescence revealed the authentic accumulation of antibodies (fourfold and more) to the recently-isolated strains and standard parainfluenzal virus I (HAII). (Author)

Lickint, F.
IS THERE NO INCREASE IN THE INCIDENCE OF LUNG CANCER IN THE SOVIET UNION? [1962] 1430 words.
Order from K-H $6.25 K-H 6405-a

Trans. of Deutsche Med[izinische] Woch[enschrift] (West Germany) 1956, v. 81, no. 5, p. 173-174.

DESCRIPTORS: *Lungs, *Cancer.

Lickint, F.
NICOTINE AND DISEASES OF THE CIRCULATION. [1962] 17p.
Order from K-H $21.25 K-H 9561-a

Trans. of [der] Landarzt (West Germany) 1959, v. 35, p. 470-475.

DESCRIPTORS: *Nicotine, *Diseases, *Blood circulation.

Lickint, F.
TOBACCO AND TOBACCO SMOKE AS ETIOLOGICAL FACTOR OF CARCINOMA. [1962] 26p.
Order from K-H $32.50 K-H 9222

Trans. of Zeitschrift für Krebsforschung (Germany) 1930, v. 30, p. 349-365.

DESCRIPTORS: *Cancer, *Tobacco, *Smokes, Etiology.

Lickint, F.
TOBACCO SMOKE AS A CAUSE OF LUNG CANCER. [1962] 103p.
Order from K-H $128.75 K-H 9500a

Trans. of unidentified article pub. by T. Steinkopff, Dresden/Leipzig, p. 66-111 and 120-138.

DESCRIPTORS: *Lungs, *Cancer, *Tobacco, *Smokes.

Lokander, Sven.
ON BREAKING THE TOBACCO HABIT AMONG MODERATE SMOKERS, IV. [1962] 13p.
Order from K-H $16.25 K-H 9477-b

Trans. of Svenska Läk[ar]tidn[ingen] 1959, v. 56, no. 27, p. 2080-2089.

DESCRIPTORS: *Tobacco, *Cigarettes.

Lupu, N. G. and Velikan, K.
INTERSTITIAL CONNECTIVE TISSUE DURING THE PRE-ROENTGENO-LOCICAL STAGE OF TOBACCO-AFFECTED LUNG. [1962] 21p.
Order from K-H $26.25 K-H 11411-f

Trans. of Arkh[iv] Pat[ologii] (USSR) 1961, v. 23, no. 6, p. 38-47.

DESCRIPTORS: *Lungs, *Tobacco, Tissues (Biology).

Mestitzova [M]. and Kossey, P.
EXPERIMENTAL CONTRIBUTION TO THE PROBLEM OF THE GENESIS OF LUNG CANCER. [1962] 23p.
Order from K-H $14.13 K-H 11092-c

Trans. of Neoplasma (Czechoslovakia) 1961, v. 8, no. 1, p. 27-39.
Another trans. is available from OTS or SLA $1.60 as 62-19330, JPRS-4621, 17 May 61 [17]p.

DESCRIPTORS: Etiology, *Lungs, *Cancer, Benzene derivatives, Cancer research, *Industrial plants, * Air, Contamination.

For abstract see Technical Translations 8: 110, 1962.

Mison-Crighel, Nella, Constantinescu, Elisabeta, and Crighel, E.
THE EFFECT OF THE PRECONVULSIVE FUNCTIONAL STATE UPON THE DEVELOPMENT OF A CONVULSIVE ATTACK AND UPON THE BIOCHEMICAL CHANGES CAUSED BY CONVULSIONS. [1962] [12]p. (2 figs. omitted) 17 refs.
Order from OTS or SLA $1.60 62-14689

Trans. of Ukr[ayins'kyi] Biokh[imichnyi] Zhurn[al] (USSR) 1959, v. 31, no. 6, p. 834-848.

DESCRIPTORS: *Brain, *Metabolism, Glycogen, Lactic acid, *Convulsions, Biochemistry, Inhibition, Adenosine phosphates, Electroencephalography.

A state of stimulation in rats caused by an injection of four mg of sodium benzoic caffeine per 100 g of body weight produces an irregular curve on the EEG with rapid waves of a frequency of 25-30 y/c, predominating. Biochemical investigations indicate a significant increase of ATP and lactic acid in the brain. The content of glycogen remains unchanged. With super-inhibition caused by an injection of 20-40 mg of caffeine per 100 g of body weight the EEG curve is regular and consists of waves of small amplitude with the frequency of 30-40 y/c. The content of glycogen in the brain decreases significantly, and lactic acid is increased while the content of ATP remains practically unchanged. Glycemia increases depending upon the dose of the injected caffeine. A definite coorelation between glycemia and glycogen content in the brain could not be detected. In case of inhibition following a convulsive attack the EEG curve has an iso-electric form or slow waves of small amplitude are recorded in the curve. The content of glycogen and lactic acid in the brain increases significantly but the ATP content remains unchanged. The duration and severity of the convulsive attack evoked by electric shock as well as the biochemical changes caused by the shock depend upon the state of the pre-convulsive excitability. (Author)

Moura, Roberto Soares de.
ACTIONS AND EFFECTS OF ASPIRATION OF SMOKE OF BRAZILIAN CIGARETS ON ARTERIAL PRESSURE AND RESPIRATION. [1962] 11p.
Order from K-H $13.75 K-H 9856-b

Trans. of O Hospital (Brazil) 1959, v. 55, no. 4, p. 553-561.

DESCRIPTORS: *Respiration, *Smokes, Brazil, *Cigarettes, *Arteries, Pressure, Blood pressure.

Müller, Franz Hermann.
TOBACCO MISUSE AND LUNG CARCINOMA. [1962] 43p.
Order from K-H $53.75 K-H 10085

Trans. of Z[eitschrift für] Krebsforschung (Germany) 1939, v. 49, no. 1, p. 57-84.

DESCRIPTORS: *Tobacco, *Lungs, *Cancer.

Myasnikov, A. L.
ARTERIOSCLEROSIS AND HYPERTENSION. 4 Apr 62
[17]p. JPRS: 13345.
Order from OTS or SLA $1.60 62-23837

Trans. of mono. Ateroskleroz (Arterosclerosis), Moscow, 1960, p. 118-129.

DESCRIPTORS: *Arteriosclerosis, *Hypertension, Cholesterol, Pathology, Blood pressure.

Opsahl, Roald.
THE CIGARET CANCER AS A HYGIENIC PROBLEM.
[1962] 13p.
Order from K-H $17.25 K-H 5470-d

Trans. of Norsk Laegeforening. Tidsskrift, 1956 [v. 76] no. 16, p. 549-552.

DESCRIPTORS: *Cigarettes, *Cancer.

Pfeffer, K. H., Zimmer, V. and others.
THE TREATMENT OF ACUTE AND CHRONIC HEPATITIS AND THEIR CONSEQUENCES WITH SULFONYLUREAS. 29 Dec 60,9p. [figs. tables refs. omitted].
Order from SLA $1.10 62-14917

Trans. of Ärztliche Wochenschrift (Germany) 1958, v. 13 [no. 5] p. 97-105.

DESCRIPTORS: Therapy, *Hepatitis, *Drugs, *Sulfonyl radicals, Butyl radicals, *Urea, Liver, Glycogen, Hypoglycemia, *Diabetes.

Sung, Hung-chao and Lien, Li-chuan.
RESEARCH IN CHORIONEPITHELIOMA. 13 July 62
[12]p. 30 refs. JPRS: 14472.
Order from OTS or SLA $1.60 62-25990

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 357-363.

DESCRIPTORS: *Cancer, *Uterus, Fetal membranes, Therapy, Diagnosis.

Tuba, J. and Jost, F.
ON THE HARMFULNESS AND WITHDRAWAL OF NICOTINE CONSUMPTION. [1962].
Order from K-H $27.50 K-H 10897-c

Trans. of Wiener Medizinische Wochenschrift (Austria) 1960, v. 110, no. 40, p. 819-823.

DESCRIPTORS: *Nicotine, Consumption.

Wang, Chi-Wu and Ch'ien, Mu-han.
ACHIEVEMENTS IN RESEARCH ON PREVENTION AND TREATMENT OF PARAGONIMIASIS. 10 July 62
[32]p. 83 refs. JPRS: 14424.
Order from OTS or SLA $3.60 62-25721

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements [in the] Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. [63]-72.

DESCRIPTORS: *Trematodes, *Parasitic infections, Countermeasures, Therapy, Lungs, China, Medical research

Wang, Shu-chen and Li, Hui-fang.
ACHIEVEMENTS IN THE PREVENTION OF ECLAMPSIA IN SHANGHAI. 13 July 62 [14]p.
JPRS: 14473.
Order from OTS or SLA $1.60 62-25992

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 367-372.

DESCRIPTORS: *Pregnancy, *Toxicity, *Nephritis, Edema, Hypertension, Inhibition, Countermeasures, Vital statistics, China.

Wang, Shu-chen and Lu, Hsiang-yun.
ANALYSIS OF CAUSES OF STILLBIRTHS AND NEONATAL DEATHS. 2 July 62 [21]p. JPRS: 14341.
Order from OTS or SLA $2.60 62-25619

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 330-340.

DESCRIPTORS: Etiology, *Vital statistics, *Childbirth, *Infants, Pregnancy.

Weng, Hsin-chih, Chung, Hui-lan and others.
RESEARCH ON CLONORCHIASIS SINENSIS. 3 July 62
[12]p. 26 refs. JPRS: 14359.
Order from OTS or SLA $1.60 62-25610

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 72-75.

DESCRIPTORS: Trematodes, Parasitic infections, Countermeasures, Liver, Therapy, Drugs, *Dosage, *Chloroquine, Fishes, China

Pharmacology and Toxicology

PHARMACY, 1962, VOL. 11, NO. 1: [SELECTED ARTICLES]. 2 July 62 [24]p. JPRS: 14343.
Order from OTS or SLA $2.60 62-25621

Trans. of Aptechnoe Delo (USSR) 1962, v. 11, no. 1, p. 3-18.
##Another trans. of (p. 3-11) is available from OTS or SLA $1.60 as 62-25055, JPRS-14031, 6 June 62 [13]p.

DESCRIPTORS: *Pharmacology, *Drugs, Public health, Alkaloids, Plants, Medical research, Antibiotics.

Contents:
##Pharmacy (theory and practice)
The scientific activity of the All-Union Scientific Pharmaceutical Society, by Yu. A. Blagovidova
Development of pharmacy in the Armenian SSR in the past forty years, by R. S. Parsadanyan and Ts. F. Khachatryan.

Aceves Ortega, R.
CLINICAL EVALUATION OF A NEW ANTIHISTAMINIC, 2 1-[2-(2-DIMETHYLAMINOETHYL)-3-INDENYL]-ETHYL PYRIDINE MALEATE (Valoracion Clinica de un Nuevo Antihistaminico, Maleato de la 2- 1-[2-(2-Dimetilaminoetil)- 3-Indenil] -Etil piridina, en las Dermatosis Pruriginosis). [1962] 8p. 9 refs.
Order from SLA $1.10 62-16083

Trans. of Semana Medica de Mexico, 1960 [v. 29] 23 Dec, p. 319-322.

DESCRIPTORS: *Drugs, *Vasomotor drugs, Allergy, Pharmacology, *Indene, Pyridines, *Histamines, Ethyl radicals, Methyl radicals.

Amico, G. d'.
STUDIES ON THE DIURETIC EFFECT OF A NEW DRUG OF THE BENZOTHIAZIDE GROUP: CYCLOPENTHIAZIDE (PRELIMINARY REPORT) (Indagini sull'Effetto Diuretica di un nuovo Farmaco del Gruppo dei Benzotiazidici: la Ciclopentiazide (Nota Preliminare)). [1962] [10]p. 5 refs.
Order from SLA $1.10 62-10916

Trans. of Riforma Medica (Italy) 1961, v. 75, 25 Mar, p. 321-324.

DESCRIPTORS: *Diuretics, *Drugs, Sulfonamides, Kidneys, Excretion, Sodium, Potassium, *Pentothiazine derivatives.

The diuretic action of a new diuretic belonging to benzothiazide groups, has been studied: cyclopenthiazide. Preliminary tests indicate that a single 0.25-mg dose of cyclopenthiazide has the same diuretic and Na and K excretory effects of a 100 times larger dose of hydrochlorothiazide on a normal subject. Prolonged administration of the new product at daily doses not exceeding 1 mg to 10 patients with obvious signs of water-and-salt retention causes a patent increase of water diuresis comparable to the increase produced by larger doses of other diuretics belonging to the same group. The above-said action is subsequent to an intense sodium output caused by the product. A slight increase of the K urinary output seems to be associated with a marked increase of Na and H_2O urinary output, in the last resort, less than the one caused by other drugs of the chlorothiazide group, with equal diuretic and natriuretic effects. (Author)

Bacq, Z. M. and Dresse, A.
NORMETANEPHRINE AND CONTRACTION OF THE NICTITATING MEMBRANE IN CATS UNDER RESERPINE (Normétanéphrine et Contraction de la Membrane Nictitante du Chat Réserpiné). [1962] 3p.
Order from SLA $1.10 62-16076

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1961, v. 155 [no. 5] p. 1170-1172.

DESCRIPTORS: *Vasomotor drugs, Kallikrein, Pharmacology, *Eye, Physiology, *Reserpine, *Epinephrine, Autonomic nervous system.

In using in cats under reserpine, a specific test of the effects of the catecholamines, we have demonstrated an in vivo transformation of normetanephrine into norepinephrine. We simply found again an effect already described: a sensitization by normetanephrine of the peripheral manifestations of norepinephrine. (Author)

Baldratti, G., Arcari, G. and others.
BIOLOGICAL PROPERTIES OF A NEW ANABOLIC STEROID ACTIVE ON ORAL ADMINISTRATION. June 61, 12p. 15 refs.
Order from SLA $1.60 61-20909

Trans. of Sperimentale [Archivio di Biologia Normal e Patologica (Italy) 1959, v. 109 [no. 4, p. 383-394].

DESCRIPTORS: *Drugs, *Androgens, *Steroids, Pharmacology, *Hormones, Growth, *Testosterone, Toxicity, Liver.

4-Hydroxy-17 -methyltestosterone is a new steroid active on oral administration; its myotrophic effect is equal to 3.298 times the myotrophic effect of methyltestosterone and its androgenic effect is 0.4805 times the androgenic effect of methyltestosterone. Its relative therapeutic index is 6.863. This new derivative has no progestational, estrogenic or corticoid effect. On the contrary, it possesses a definite anti-estrogenic effect and undoubtedly inhibits the production of hypophyseal gonadotrophins. (Author)

Benzi, G.
A FURTHER CONTRIBUTION OF THE PHARMACOLOGICAL STUDY OF THE ISOLATED ODDI'S SPHINCTER. [1962].
Order from K-H $6.25 K-H 10764-a

Trans. from [Società Italiana di Biologia Sperimentale. Bollettino] 1960, v. 36, no. 14.

DESCRIPTORS: *Drugs, *Gallbladder, Pancreas, Ducts, *Secretion.

Boskovic, B. and Stern, P.
EXPERIMENTAL CONTRIBUTION TO THE TREATMENT OF PARKINSON'S DISEASE (Eksperimentalni Prilog Terapiji Morbus Parkinsoni). 11 Sep 61 [6]p. JPRS: 10104.
Order from OTS or SLA $1.10 62-19705

Trans. of Vojnosanitetski Pregled (Yugoslavia) 1960, v. 17, no. 9, p. 909-910.

DESCRIPTORS: *Drugs, *Poisoning, Cholinesterase, Inhibition, Atropine, *Parkinsonism, Therapy, Spasms, Toxicity.

SKF 525 A, by increasing the action of atropine, prevents spasms if given beforehand and stops them if given after tremorine. The mechanism of this phenomenon is discussed.

Bovet, Daniel and Walthert, France.
CHEMICAL STRUCTURE AND PHARMACODYNAMIC ACTIVITY OF THE SYNTHETIC ANTIHISTAMINES. [1962] [51]p. 59 refs.
Order from SLA $5.60 62-16040

Trans. of Annales Pharmaceutiques Francaises, 1944, v. 2, suppl. no. 4, p. 3-43.

DESCRIPTORS: Chemical properties, Pharmacology, *Drugs, Vasomotor drugs, *Histamines, Inhibition, *Toxicity, Anaphylactic shock, Phenols, Ethers, Heterocylic compounds, Stomach, Secretion, Muscles, Uterus, Spasms, Lungs, *Allergy, Therapy, Bibliography.

Buffoni, F. and Giotti, G.
THE ACTION OF NICOTINE ON THE PHOSPHORYLASIC ACTIVITY OF THE ATRIA OF THE GUINEA PIG. [1962] 5p.
Order from K-H $6.25 K-H 11548-a

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1961, v. 37, p. 675-678.

DESCRIPTORS: *Drugs, *Nicotine, *Phosphorylation, *Cardiac muscle, Heart, Laboratory animals.

Bünger, Paul.
PRACTICAL EXPERIENCE WITH THE USE OF NEW LONG-ACTING SULFONAMIDES. 5 Jan 62, 33p.
Order from SLA $3.60 62-14099

Trans. of mono. (paper) presented at the 26th Advanced Course for Physicians from the First Medical Division of the General Heidberg Hospital, Hamburg-Langenhorn, held in Regensburg, 14 May 61.

DESCRIPTORS: *Sulfonamides, Therapy, *Drugs, Pharmacology, *Toxicity, Metabolism.

Catros, Vivien and others.
AXIAL OPTIC NEURITIS IN THE COURSE OF TREATMENT WITH D860 (TOLBUTAMIDE).
21 Feb 61, 4p. [refs. omitted].
Order from SLA $1.10 62-14950

[Condensed] trans. of Revue d'Oto-Neuro-Ophtalmologie (France) 1958, v. 30 [no. 4] p. 253-257.

DESCRIPTORS: *Sulfonamides, *Optic nerve, Inflammation, *Diabetes, Therapy, Drugs, Toxicity, Eye, *Sulfonamides.

Having had the occasion recently to observe a case of bilateral retrobulbar optic neuritis in the course of a severe case of diabetes treated with one of the hypoglycemic sulfonamides, D860, we have felt it advisable to report our observations. (Author)

Chemnitius, K.-H., Doss, M, and Karl, M.
INHIBITION OF CORTISONE BREAKDOWN IN RAT LIVER HOMOGENATES BY BUTENOLIDES AND BUTENOLIDE-DIPYRINE COMBINATIONS. [1962] 6p.
Order from ATS $9.90 ATS-33P60G

Trans. of Acta Biol[ogica] et Med[ica] Ger[manica] (West Germany) 1960, v. 4, p. 216-221.

DESCRIPTORS: *Adrenal cortical extract, *Corticosteroids, Inhibition, Decomposition, Liver, *Drugs.

Creutzfeld, W., Detering, L., and Welte, O.
THE EFFECTS ON THE BETA CELL OF D 860 AND DIABETOGENIC HORMONES IN NORMAL AND HYPOPHYSECTOMIZED RATS AND IN RABBITS. [1962] [12]p.
Order from SLA $1.60 62-14923

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1564-1568.

DESCRIPTORS: *Insulin, *Hormones, *Drugs, *Sulfonamides, *Diabetes, Pancreas, Toxicity, Cells (Biology).

Creutzfeldt, W. and Schlagintweit, St.
THE ACTION OF D 860 IN SOME SPECIAL FORMS OF DIABETES: CLINICAL AND LABORATORY FINDINGS IN CASES OF STEROID DIABETES, DIABETES WITH HEMOCHROMATOSIS, RENAL DIABETES AND DIABETES WITH SEVERE INSULIN RESISTANCE. [1962] [7]p.
Order from SLA $1.10 62-14927

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1539-1541.

DESCRIPTORS: *Drugs, *Sulfonamides, Therapy, *Diabetes, *Hemochromatosis, *Insulin, Kidneys, Toxicity.

In four cases of steroid diabetes and in three cases of diabetics with hemochromatosis, D 860 had no effect on blood sugar and glycosuria. In one case of renal glycosuria, no effect on urine sugar excretion could be found. In one case of hepatogenic resistance to insulin (not conditioned by antibodies), combined therapy with insulin and D 860 led to a considerable reduction of an abnormally high insulin requirement. (Author)

Cugurra, F. and Baldini, L.
ON THE CAPACITY OF SO-CALLED GANGLIOPLEGICS TO BLOCK THE HYPERMETABOLIC IMPULSE FROM COLD. [1962] 5p.
Order from K-H $6.25 K-H 5352-b

Trans. of Soc[ietà] Italiana di Biologia Sperimentale. Boll[ettino] 1955, v. 31, p. 883-885.

DESCRIPTORS: *Exposure, *Metabolism, Drugs, *Ganglia, *Paralysis, Autonomic nervous system, Inhibition.

Denys, Annette, Levy, Jeanne, and Michel-Ber, Estera.
INHIBITION BY VARIOUS ADRENOLYTIC OR SYMPATHOLYTIC AGENTS OF THE DEPRESSIVE ACTIONS OF ADRENALIN, NORADRENALIN, AND NICOTINE ON ISOLATED RAT DUODENUM. [1962] 15p.
Order from K-H $19.75 K-H 10454-a

Trans. of Therapie (France) 1960, v. 15, no. 2, p. 297-305.

DESCRIPTORS: Inhibition, Drugs, *Epinephrine, Adrenal glands, Secretion, *Autonomic nervous system, *Nicotine, *Intestine, Rats.

Froesch, E. R., Labhart, A. and others.
DIAGNOSTIC USE OF A NEW ADRENOSTATIC (Diagnostische Anwendung eines Neuen Adrenostaticum). [1962] 9p. 6 refs.
Order from SLA $1.10 62-10729

Trans. of Schweiz[erische] Med[izinische] W[ochen]schr[ift] 1959, v. 89, 21 Nov, p. 1232-1234.

DESCRIPTORS: Diagnosis, Diseases, *Adrenal glands, *Drugs, Steroids, Inhbition, *Secretion, *Corticosteriods, Pituitary glands

SU 4885 is an adrenostatic drug of little toxicity, derived from amphenone. It selectively blocks 11-β-hydroxylation when administered in adequate amounts and makes it possible to determine the ACTH reserve of the pituitary gland. The comparison of the steroid excretion under administration of ACTH and SU 4885 seems to be of particular value in assessing whether pituitary hyperfunction is responsible for adrenal overactivity or not. It seems possible to get some idea of the degree of autonomy of adrenal tissue which might help in the choice of the causal treatment of adrenal hyperfunction. (Author)

Furthmüller, W., Kühne, P. and others.
PROTEIN METABOLISM DURING ANTIDIABETIC TREATMENT WITH D 860. [1962] [17]p.
Order from SLA $1.10 62-14930

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1531-1533.

DESCRIPTORS: *Diabetes, *Drugs, Toxicity, Metabolism, Proteins, Liver, *Sulfonamides

Göttlicher, O., Kaindl, F., and Kühböck, J.
AMBULATORY THERAPY OF HYPERTENSION WITH GUANETHIDINE (Ambulante Hochdrucktherapie mit Guanethidin). [1962] [1]p.
Order from SLA $1.10 62-16059

Trans. of Münch[ener] Med[izinische] W[ochen]schr[ift] (West Germany) 1961, v. 103, 15 Dec, p. 2485-2486.

DESCRIPTORS: *Hypertension, *Drugs, Therapy, *Guanethidine

Grahmann, H.
SIDE EFFECTS IN THE USE AND ABUSE OF DORIDEN (GLUTETHIMIDE) (Nebenwirkungen bei Gebrauch und Missbrauch von Doriden (Glutethimid)). [1962] 4p. 8 refs.
Order from SLA $1.10 62-16009

Trans. of Archiv für Toxikologie (West Germany) 1961, v. 19, p. 196-198.

DESCRIPTORS: *Toxicity, Drugs, Dosage, *Glutaric acid, *Amides, Narcotics, Poisoning, Psychosis.

Gross, F.
PHARMACOLOGY OF THE NEW HYPOTENSIVE SUBSTANCES (Farmacologia delle Nuove Sostanze Ipotensive). Apr 62, 26p. 55 refs.
Order from SLA $2.60 62-16210

Trans. of [Società Lombarda di Scienze Mediche e Biologiche]. Atti (Italy) 1960, v. 15, suppl. p. 582-601.

DESCRIPTORS: Pharmacology, *Drugs, *Vasomotor drugs, Therapy, *Hypotension, Guanethidine, Reserpine, Rauwolfia alkaloids, Hydrazine derivatives.

Krivosheeva, O. S.
MATERIALS CONCERNING THE DYNAMICS OF BROMINE IN THE CNS DURING DIFFERENT FUNCTIONAL STATES. [1962] [9]p. 20 refs.
Order from OTS or SLA $1.10 62-14710

Trans. of mono. [Voprosy Eksperimental'noi Patologii] (Problems of Experimental Pathology) [ed. by] S. N. Braines [Moscow] 1959, chap. 22, p. 243-252.

DESCRIPTORS: *Drugs, Pharmacology, *Bromine, *Nervous system, Brain, Sleep.

Our findings as to bromine distribution in the CNS and its redistribution in connection with inhibition during sleep and reflective stimulation lead us to assume that bromine participates directly in the processes of neurodynamics within the CNS. The pronounced differences in the relative bromine content of the different divisions of the brain, specific differences of bromine distribution under various conditions such as sleep, wakefulness, and stimulation fit into the framework of contemporary physiological theory of the physiological differences of these functional states. (Author)

Küchle, H. J.
LOCAL ACTION OF GUANETHIDINE (ISMELIN) ON HEALTHY AND GLAUCOMATOUS EYES (Zur Lokalen Wirkung von Guanethidin (Ismelin) auf das Gesunde und Glaukomkranke Auge). [1962] [12]p. 23 refs.
Order from SLA $1.60 62-10915

Trans. of [Klinische] Monatsblätter f[ür] Augenheilkunde (West Germany) 1961, v. 139, p. 224-234.

DESCRIPTORS: *Eye, *Glaucoma, *Drugs, Therapy, *Guanethidine, Pharmacology, Pilocarpine.

The sympathico-inhibiting drug guanethidine which has proved useful in the therapy of hypertension, is capable of bringing about a minor constriction of the pupil and a decrease of intraocular tension in the form of 10% Ismelin drops which can be applied to the eye without inconvenient side-effects. The tension-lowering effect is particularly impressive in cases with primary chronic glaucoma and is not or hardly inferior to the effect achievable with pilocarpine. The results obtained with Ismelin therapy (1 drop of a 10% aqueous solution t. i. d.) in 45 glaucomatous eyes justify the expectation that this drug could constitute a valuable addition to our conservative treatment of glaucoma. (Author)

Kuzhman, M. I.
THE EFFECT OF LOCAL ANESTHETICS UPON RESPIRATORY PHOSPHORYLATION. [1962] [6]p. 15 refs.
Order from OTS or SLA $1.10 62-14750

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1961 [v. 7, no. 3] p. 243-245.

DESCRIPTORS: *Drugs, *Anesthetics, Inhibition, Respiration, *Phosphorylation, *Absorption, *Oxygen, Synthesis, Phosphates, *Procaine.

The effects were studied of the more commonly used local anesthetics (novocaine, cocaine, dicaine, anesthesine, sovcaine, mesocaine and xylocaine) on the process of respiratory phospholyration. These anesthetics to a considerable degree disrupt or inhibit respiration and phosphorylation, reducing not only the absorption of oxygen, but also the synthesis of mineral phosphate.

Leclerc, Henri and Decaux, Francois.
ORTHOSIPHON STAMINEUS IN THE TREATMENT OF GOUT AND OF THE MANIFESTATIONS OF THE GOUTY DIATHESIS (L'Orthosiphon Stamineus dans le Traitement de la Goutte et des Manifestations de la Diathése Goutteuse) tr. by W. H. Everhardy. 3 Sep 59, 8p. 6 refs.
Order from OTS or SLA $1.10 59-19210

Trans. of Gaz[ette] Med[icale] de France, 1940, v. 47, p. 48-52.

DESCRIPTORS: *Arthritis, Therapy, *Drugs, Excretion, Plants.

Levy, Jeanne and Michel-Ber, E.
ON THE ACTION PRODUCED BY GANGLIONIC STIMULANTS ON THE ISOLATED GUINEA PIG AURICLE. II. POSITIVE CHRONOTROPIC AND INOTROPIC ACTIONS. [1962] 2p.
Order from K-H $2.50 K-H 5525-b

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. Compt[es] Rend[us des Seances] (France) 1956, v. 150, p. 272-274.

DESCRIPTORS: *Drugs, Nervous system, *Stimulation, *Ganglia, Heart, Laboratory animals, *Cardiac muscle.

Longe, V. G. and Bovet, D.
ELECTROENCEPHALOGRAPHIC STUDY OF THE ANTAGONISM SHOWN BY ANTI-PARKINSONIAN DRUGS ON THE TREMORS PRODUCED BY NICOTINE. [1962] 6p.
Order from K-H $7.50 K-H 3324-b

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1952, v. 28, p. 612-615.

DESCRIPTORS: *Encephalography, *Drugs, *Parkinsonism, Shivering, *Nicotine.

Minuth, W.
ON THE EFFECT OF INHALED TRICHLOROETHYLENE VAPOR AND INHALED TOBACCO SMOKE ON THE BLOOD PICTURE OF THE RABBIT. 1960, 11p.
Order from K-H $13.35 K-H 10000

Trans. of Zentralblatt für Arbeitsmedizin und Arbeitsschutz (West Germany) 1959, v. 9, p. 185-188.

DESCRIPTORS: Respiration, *Vinyl chlorides, *Vapors, *Tobacco, *Smokes, Blood, *Cigarettes, Rabbits, *Toxicity, Chlorides.

Plauchu, M., Dalmais, J., and Arnaud, P.
HYPOGLYCEMIC COMA DURING TREATMENT OF A DIABETIC WITH D860 (DOLIPOL). [1962] 2p.
Order from SLA $1.10 62-16054

Trans. of Lyon Médical (France) 1957, v. 89, p. 545-552.

DESCRIPTORS: *Drugs, Therapy, *Diabetes, *Sulfonamides, *Hypoglycemia, Toxicity.

Pfeiffer, E. F., Schöffling, K. and others.
THE PROBLEM OF "SECONDARY FAILURE" DURING THE TREATMENT OF DIABETES WITH D 860. [1962] [8]p.
Order from SLA $1.10 62-14931

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1528-1531.

DESCRIPTORS: *Diabetes, *Drugs, Dosage, *Toxicity, Pancreas, Insulin, *Sulfonamides.

Pfeiffer, E. F., Schoffling, K. and others.
THE RESPONSE TO A SINGLE DOSE OF D 860 AS AN INDICATION OF SUITABILITY FOR FUTURE ANTIDIABETIC TREATMENT WITH THIS DRUG. [1962] [16]p.
Order from SLA $1.60 62-14925

Trans. of Deutsche Medizinsche Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1544-1551.

DESCRIPTORS: *Drugs, Therapy, *Sulfonamides, *Diabetes, Blood sugar, Reduction, Toxicity.

After oral administration of 3 grams of tolbutamide to fasting diabetics, a decrease in blood sugar from the initial value cannot be observed in insulin-deficient juvenile diabetics. This decline is less than 30% after administration of tolbutamide (4 hours after administration) in those diabetics who are unresponsive to oral therapy. A decline of more than 30% at the four-hour point can be found in most diabetics who respond to oral therapy. If one uses the lack of a sufficient decrease (i.e., less than 30% at the four-hour point) in blood sugar as a contraindication for oral therapy in certain patients, then the test can be seen as a useful aid in the negative sense for screening candidates for oral therapy. (Author)

Pfeiffer, E. F., Steigerwald, H. and others.
COMPARATIVE STUDIES OF THE MORPHOLOGY AND HORMONAL CONTENT OF CALF'S PANCREAS AFTER ADMINISTRATION OF D 860. [1962] [16]p.
Order from SLA $1.60 62-14922

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1568-1574.

DESCRIPTORS: *Drugs, *Diabetes, *Sulfonamides, Pancreas, Cells (Biology), *Insulin, Toxicity.

After a single dose of D 860, the beta cells show pronounced degranulation and loss of insulin. This insulin loss is compensated 3 hours after D 860 has been administered due to new production of the hormone. At the same time, a maximum increase in nucleus size is found in the beta cells. The alpha cells participate in this process, through nucleus size enlargement and increase of glucagon content. However, quantitatively, this participation is significantly smaller and occurs much later than the changes in the beta cells. The sulfonylureas primarily cause a release of insulin present in the beta cells in soluble form; this release is followed by a mobilization of the insulin bound to the granules. The secondary effect is a beginning of increased insulin production. When D 860 is continuously administered, the metabolically normal organism of the calf decreases in response to the constantly repeated secretion stimulation; responsiveness can be shown, however, even after extended use of D 860. (Author)

Romani, J. D.
INFLUENCE OF SALIDIURETICS ON URINARY ALDOSTERONE EXCRETION (Influence des Substances Sali-Diuretiques sur l'Excretion Urinaire de l'Aldosterone). [1962] [10]p. 10 refs.
Order from SLA $1.10 62-16078

Trans. of Ann[ales] d'Endocrinol[ogie] (France) 1961, v. 22 [no. 6] p. 239-247.

DESCRIPTORS: *Diuretics, *Drugs, Pharmacology, Urine, *Excretion, *Aldosterone, Kidneys, Physiology, *Sulfonamides, Methyl radical.

Sackmann, W. and Kradolfer, F.
DIRECTED INFLUENCE ON THE INTESTINAL FLORA BY MEANS OF MEXAFORM AND CHLORTETRACYCLINE (Gezielte Beeinflussung der Darmflora mit Mexaform und Chlortetrazyklin). [1962] [11]p. 39 refs.
Order from SLA $1.60 62-16077

Trans. of Schweiz[erische] Med[izinische] W[ochen]schr[ift] 1962, v. 92 [no. 2] p. 50-53.

DESCRIPTORS: *Fungi, *Intestinal bacteria, Drugs, Chemotherapeutic agents, *Aureomycin, *Tetracyclines, *Quinolines.

It has been shown by experiments in rats that alterations of the intestinal flora induced by chlortetracycline, including particularly overgrowth of intestinal yeasts, can be prevented by simultaneous administration of Mexaform (iodochloroxy-quinoline). The chemotherapeutic action of chlortetracycline is not, however, impaired by the Mexaform when given in doses sufficient to produce this effect. (Author)

Schöffling, K., Pfeiffer, E. F. and others.
SIDE EFFECTS OF PROLONGED TREATMENT WITH D 860. [1962] [4]p.
Order from SLA $1.10 62-14928

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1537-1539.

DESCRIPTORS: Therapy, *Diabetes, Toxicity, *Drugs, *Sulfonamides.

Severy, J.
FIRST CLINICAL STUDIES OF A NEW NEUROPLEGIC U.C.B. 3412. [1961] 5p.
Order from SLA $1.10 62-10266

Trans. of Acta Neurologica et Psychiatrica Belgica, 1960 [v. 60] no. 5, p. 520-524.

DESCRIPTORS: *Psychoses, *Drugs, Therapy, Dosage, Toxicity, *Phenothiazine derivatives.

The experimental product UCB 3412 shows great improvement over already known neuroplegic drugs. It gives practically no side effects and requires low dosage, allowing remarkable results in cases where all other treatments completely failed. It not only produces very satisfactory sedation; it also cancels delirious and even hallucinatory activities. (Author)

Steigerwald, H., Schöffling, K. and others.
CONTROL STUDIES IN 25 DIABETICS AFTER PROLONGED TREATMENT WITH D 860. [1962] [3]p.
Order from SLA $1.10 62-14932

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1525-1526.

DESCRIPTORS: *Diabetes, *Drugs, *Sulfonamides, Toxicity, Excretion, Creatine, Blood chemistry, Electrophoresis, Insulin.

Twenty-five diabetics who had received D 860 for an average of 11-1/2 months were given exhaustive clinical examinations. In no instance could toxic damages be found. Four patients showed pathological changes in their serum electrophoresis diagrams. No variations could be observed in the blood picture or in the sternal puncture, nor could they be observed in the bleeding and clotting times or in the prothrombin complex. The daily excretion of creatines showed variations but was not greater in comparison to diabetics who receive insulin. No variations from the norm could be observed in enzyme activity determinations with one exception where a lowered lactic dehydrogenase activity was observed. Three patients had to be returned to insulin therapy (secondary failures). Four patients were found to be no longer in need of D 860 medication. (Author)

Steigerwald, H., Böhle, E. and others.
INTERMEDIARY METABOLISM DURING THE ADMINISTRATION OF INSULIN OR D 860 IN NORMAL SUBJECTS AND DIABETIC PATIENTS. [1962] [6]p.
Order from SLA $1.10 62-14924

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1554-1556.

DESCRIPTORS: *Drugs, *Diabetes, *Insulin, *Sulfonamides, Liver, Metabolism, Toxicity

Insulin and D 860 were given to normal subjects and to diabetics and observations made of the behavior of the intermediary metabolism. In addition to blood sugar determinations, determinations were made for pyruvic acid, lactic acid, alpha-ketoglutaric acid, total fats, phosphatides, lactic acid dehydrogenase activity, serum glutamate-oxalacetate-transaminase activity. The results obtained led to the conclusion that there is a release of endogenous insulin 15 to 20 minutes after oral administration of D 860. In addition, the sulfonylureas must have an additional point of effect on the metabolism or the liver. (Author)

Steigerwald, H., Pfeiffer, E. F. and others.
SOME SIGNIFICANT CLINICAL OBSERVATIONS DURING THE TREATMENT OF DIABETES WITH D 860. [1962] [4]p.
Order from SLA $1.10 62-14926

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1541-1542.

DESCRIPTORS: *Drugs, Therapy, *Sulfonamides, *Diabetes, Insulin, Blood sugar, *Hemochromatosis, Toxicity

Reports on 2 patients with hemochromatosis and 1 patient with a primary pancreatic carcinoma were presented. D 860 treatment proved impossible in these cases. In one patient with porphyria cutanea tarda, withdrawal of D 860 resulted in a clearly increased excretion of porphyrin in the urine. During this period, daily glycosuria increased as well. D 860 administration resulted in a decrease in porphyrin and glucose excretion. (Author)

Stepanik, J.
BEHAVIOR OF INTRAOCULAR PRESSURE OF EYES WITH GLAUCOMA SIMPLEX AFTER LOCAL USE OF GUANETHIDINE (ISMELIN, CIBA) (Das Verhalten des Augendruckes von an Glaucoma Simplex Erkrankten Augen nach Lokaler Anwendung von Guanethidin (Ismelin, CIBA)). [1962] 6p. 2 refs.
Order from SLA $1.10 62-10913

Trans. of [Klinische] Monatsblätter f[ür] Augenheilkunde (West Germany) 1961, v. 139, p. 174-179.

DESCRIPTORS: *Eye, *Glaucoma, *Drugs, *Guanethidine, Therapy, Pressure, Measurement, Pilocarpine.

In eyes affected with simple glaucoma the tension-lowering effect of 10% Ismelin eye drops (CIBA) has been investigated by means of 3 test series. It could be established that the tension-lowering effect sets in one hour after application of the drug and that it attains 0.6 times the tension-lowering effect of a 1% aqueous solution of pilocarpine within the following two hours. (Author)

Stich, W., Marx, R., and Ehrhart, H.
HEMATOLOGICAL CHANGES IN DIABETIC PATIENTS WITH AND WITHOUT D 860 TREATMENT. [1962] [14]p.
Order from SLA $1.60 62-14929

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1533-1537.

DESCRIPTORS: *Hematology, *Diabetes, Therapy, *Drugs, *Sulfonamides, Bone marrow, Toxicity

Extensive hemotological examinations were made of 33 diabetics being treated with tolbutamide (period of therapy - 4 to 20 months). No significant differences were bound between diabetics treated with insulin and tolbutamide in so far as hemotology is concerned.

Thiebaut, F., Mengus, M. and others.
A CASE OF COMA DUE TO INGESTION OF GLUTETHIMIDE (Un Cas de Coma par Ingestion de Glutethimide). [1962] 3p. 14 refs.
Order from SLA $1.10 62-16066

Partial trans. (comments) of Rev[ue] Neurol[ogique] (France) 1959, v. 100, June, p. 786-789.

DESCRIPTORS: *Drugs, Poisoning, *Coma, *Glutaric acids, *Amides, Dosage, Reflexes, Respiration, Nervous system, Countermeasures.

Villela, Gilberto G. and Mello, Maria Isabel.
COPROPORPHYRINURIA IN INTOXICATION WITH DICOUMAROL. [1962] 6p.
Order from SLA $1.10 62-16035

Trans. of [Revista Brasileira de Biologia] 1948, v. 8, no. 1, p. 57-60.

DESCRIPTORS: *Coproporphyrins, *Excretion, Urine, Toxicity, *Dicumarol, Dosage, Pharmacology, Rabbits, *Drugs.

Zieher, Luis M. and Fischer, Edmundo.
EFFECT OF METHOXYDONE UPON THE PSYCHOMOTOR ACTIVITY OF THE RAT. [1962] 4p. 11 refs.
Order from SLA $1.10 62-14352

Trans. of As[ociacion] Med[ica] Argen[tina, Buenos Aires]. Rev[ista] 1960, v. 74, no. 9, p. 531-533. Another trans. is available from ATS $5.60 as ATS-05N51SP [1961] 3p.

DESCRIPTORS: *Nervous system, *Neuromuscular transmission, *Drugs.

The drug 5-(o-methoxyphenoxymethyl)-2-oxazolidone reduces spontaneous motor activity in white rats, in a statistically significant way up from 50 mg/kg of body weight when administered intraperitoneally. The maximum effects are reached practically with doses of 100 mg/kg of body weight. The drug proves to be potent in regard to this action, since the dosage which blocks the conditioned responses in 50% of the rats is around 250 mg/kg, while a reduction of 50% of spontaneous motor activity is obtained with only 53 mg/kg of body weight. (Author)

Radiobiology

Luchnik, N. V. and Timofeeva-Resovskaya, E. Ya.
THE EFFECT OF VARIOUS AGENTS ON RADIATION INJURIES, PTS. 4-6. 14 Aug 61 [149]p. 57 refs.
JPRS: 9718.
Order from OTS or SLA $11.00 61-27666

Trans. of [Akademiya Nauk SSSR]. Institut Biologii [Sverdlovsk]. Trudy, 1960, no. 12, p. 46-118.

DESCRIPTORS: *Radiation injuries, *Radiation effects, *Radioprotective drugs, Dosage, Laboratory animals, Mice, Rats, Plants, Vegetables, Drosophila, Histology, Mitosis, *Cysteine, Thiourea, Thiols, Thiosulfates, Anilides, Glycolic acids, Nucleic acids, Metabolism,Yeasts, *Radiobiology.

Contents:
The effect of various substances administered to mice on the effect of radiation
The effect of cysteine and certain other sulfur-containing substances on the effect of irradiation of animals and plants
The effect of yeast extracts on the mortality of irradiated mice and pea seedlings.

Zakutinskii, D. I., ed.
LONG TERM EFFECTS OF INJURIES CAUSED BY THE ACTION OF IONIZING RADIATION: EXPERIMENTAL INVESTIGATIONS. Sep 61, 220p. 226 refs.
Order from OTS $3.00 AEC-tr-4473

Trans. of mono. Otdalennye Posledstviya Porazhenii Vyzvannykh Vozdeistviem Ioniziruyushchei Radiatsii, Moscow, 1959 [248p.]

DESCRIPTORS: *Pathology, *Radiobiology, *Radiation injuries, Animals, Tissues (Biology), Morphology, *Blood forming organs, Blood, *Brain, Bone, *Stomach, *Reproductive system, Fertility, *Sarcoma, *Tumors, *X-rays, Ionization, *Fast neutrons, Radioactive isotopes, *Tritium oxide, *Silicon compounds, Dioxides, *Radon, *Thorium, *Strontium, *Yttrium, Uranium, Psychoneuroses, *Pharmacology, Radiation sickness

Contents:
The problem of the long-term effects of injuries caused by the action of ionizing radiation, by D. I. Zakutinskii
Long-term effects of the action of fast neutrons on the organism of animals, by V. V. Sokolov
Some data on the long-term effects of injury to animals by tritium oxide, by V. F. Zhuravlev
On the problem of the long-term effects of the combined injury to animals of silicon dioxide and radon, by V. S. Kushneva
Some data on the long-term effects of injuries by small doses of radioactive substances in a chronic experiment, by D. I. Zakutinskii and L. N. Burykina
Pathological changes in the organism of animals in the case of chronic action by products of uranium fission in small doses, by E. N. Klimova
Change in the picture of the blood in animals at long-term periods after the introduction of radioactive substances into the organism, by I. K. Petrovich
On the disturbance of hematogenesis in the long-term period of chronic radiation sickness produced by polonium, radiothorium and radon, by A. A. Kanarevskaya and S. E. Posherstnik
Changes in the blood after the systematic prolonged action of X-rays in small doses, by M. S. Lapteva-Popova
Some clinical and biochemical indices of the state of the organism of animals in long-term periods after the introduction of radiothorium, by S. M. Mikhilovich
Characteristics of the reactivity of animals suffering from radiation sickness developed with experimental neuroses, by E. N. Antipenko
The change in the radioactivity of an organism injured by radioactive substances upon introduction of various pharmacological substances, by D. I. Zakutinskii and others
The influence of loss of blood on animals suffering from acute radiation sickness, by V. N. Pravetskii
Morphological changes in the long-term period of the action of certain radioactive products, by A. P. Novikova
Changes in the glia in the brain of dogs during long-term periods after acute radiation sickness, by L. L. Vannikov
Changes in the loose connective tissue during chronic radiation sickness, by V. V. Shikhodyrov
Morphological changes in animals during late periods after the introduction of small doses of radiothorium, by E. V. Erleksova
Dynamics of the development of osteogenic sarcomas in experiments, by R. I. Makarycheva
A further study of the appearance and development of bone sarcoma in cases of injury by radioactive strontium (Sr^{90}) and by yttrium (Y^{91}) by N. N. Litvinov
Development of tumors in rabbits at the site of introduction of fission products of uranium, by L. L. Khamaide
Changes in the sexual function in male dogs during long-term periods after injury by fast neutrons and X-rays, by N. E. Trusova
On the problem of the influence of radioactive strontium on the sexual function and the fertility of white rats, by A. Novikova and L. N. Burykina

Clinical and pathomorphological investigations of the offspring of dogs subjected to the action of fission products of uranium, by S. P. Voskresenskii and A. P. Novikova

Peculiarities of the peripheral blood and hematogenic organs of puppies born from dogs subjected to the action of uranium fission products, by T. A. Ivanova

Disturbance of the activity of the stomach in the offspring of dogs born from parents injured by radioactive substances, by N. S. Boiko.

Zhemkova, Z. P. and Perumova, N. D.
A CONTACT RADIOGRAPHIC STUDY OF THE UPTAKE OF SOME ISOTOPES INTO THE ORGANS OF ANIMALS OF DIFFERENT SPECIES, AGE, AND INDIVIDUAL CHARACTERISTICS. [1962] [25]p. 62 refs.
Order from OTS or SLA $2.60 62-14794

Trans. of #[Voprosy] Onkol[ogii] (USSR) 1960 [v. 6] no. 3, p. 201-213.

DESCRIPTORS: *Radiography, *Radioactive isotopes, Sulfur, Phosphorus, Strontium, *Tissues (Biology), Animals, Bibliography.

The present paper is a summary of numerous studies on the determination of radioactive isotope incorporation (S^{35}, P^{32}, Sr^{90}) by the organs in case of their subcut. injection, administered in the form of sol. compounds (methionine, Vitamin B_1, monobasic Na-biphosphate, Sr-carbonate) to different laboratory animals in different doses. An attempt was made to establish the difference of isotope intake by animal tissue depending upon the classification (rodents, carnivorous animals, birds), age, and physiological state. (Author)

Surgery

Borovyi, E. M.
HERNIA ALLOPLASTY WITH CAPRON. 4 Apr 62 [7]p. 3 refs. JPRS: 13337.
Order from OTS or SLA $1.10 62-23817

Trans. from Novyi Khirurgicheskii Arkhiv (USSR) 1962 [v. 41] no. 1.

DESCRIPTORS: *Hernia, Surgery, Abdomen, Muscles, *Plastic surgery, Prosthetics, Plastics, *Synthetic fibers.

Several examples are described of successful Soviet hernia operations in which Capron was used.

Rudaev, Ya. A.
ALTERATIONS IN BASAL METABOLISM IN ONCOLOGICAL PATIENTS UNDERGOING SURGERY WITH DIFFERENT TYPES OF INHALATION ANESTHESIA. 8 May 62 [6]p. 1 ref. JPRS: 13681.
Order from OTS or SLA $1.10 62-24405

Trans. of Novyi Khirurgicheskii Arkhiv (USSR) 1962 [v. 41] no. 2, p. 24-27

DESCRIPTORS: *Metabolism, Reduction, *Anesthesia, *Cancer, *Surgery, Nitrogen compounds, Oxygen, *Muscle relaxants, Drugs.

During inhalation ether-oxygen anesthesia, and during nitrous oxide anesthesia, a lowering of basal metabolism was observed. The degree of reduction in basal metabolism was independent of the method of anesthesia, the potentiation, the use of controlled respiration and type of anesthetic agent. The degree of reduction in basal metabolism depends upon the depth of anesthesia, i.e., the degree of depression of the central nervous system. In stage III of anesthesia, basal metabolism is decreased by 40-60%. (Author)

Ts'ui, Chih-yu.
SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS. 21 June 62 [20]p. 55 refs.
JPRS: 14210.
Order from OTS or SLA $1.60 62-25484

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses] on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping, Dec 59, p. 241-251.

DESCRIPTORS: *Surgery, *Peptic ulcers, Stomach, Intestine, China

Zoology

Bogoslovskii, A. S.
ROTIFER VORONKOWIA MIRABILIS FADEEV SYNOMYN FOR SINANTHERINA SOCIALIS (LIN.) IN THE LARVAL STAGE AFTER LEAVING THE RESTING EGG. [1962] [4]p. 5 refs.
Order from OTS or SLA $1.10 62-14901

Trans. of [Zoologicheskii Zhurnal] (USSR) 1950, v. 29 [no. 6] p. 566-568.

DESCRIPTORS: *Aquatic animals, Classification, Morphology.

Faktorovich, K. A.
DISORDERS IN FAT METABOLISM OF THE LIVER IN RAINBOW TROUT BRED ON ARTIFICIAL FEEDS (O Narushenii Zhirovogo Obmena v Pecheni Raduzhnoi Foreli pri Vyrashchivanii na Iskusstvennykh Kormakh). 1962, 7p. 7 refs. PL-480 Int.
Order from OTS $0.50 61-31048

Trans. of mono. Trudy Soveshchaniya po Fiziologii Ryb, n.p., 1959, p. 237-243.

DESCRIPTORS: Fish, *Trout, *Fisheries, Feeding, *Liver, *Body fats, Metabolism

Shifting rainbow trouts from a natural diet to an artificial one results in considerable metabolic changes, especially changes in fatty metabolism. When the fish are fed deficient foods, the metabolic changes may bring about fatty dystrophy of the liver and a number of concomitant pathological occurrences. A rational change in the food regimen reverses the pathological process and brings about regeneration of the liver and recuperation of the fish. (Author)

Lom, J. and Vavra, J.
SOME RESULTS OF INVESTIGATIONS OF THE ULTRASTRUCTURE OF SPORES OF THE FISH PARASITE PLISTOPHORA HYPHESSOBRYCONIS (MICROSPORIDIA). [1962] 4p.
Order from ATS $8.00 ATS-70P61P

Trans. of Wiadomosci Parazytol[ogiczne] (Poland) 1961, v. 7, no. 4/6, p. 828-832

DESCRIPTORS: Fishes, *Parasites, *Protozoa, Spores, Microstructure

CHEMISTRY

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: CHEMISTRY, 1961, NOS. 8-11. 18 May 62 [66]p. JPRS: 13794.
Order from OTS or SLA $6.60 62-24702

Trans. of selected abstracts from Referativnyi Zhurnal Khimiya (USSR) 1961, nos. 8-11.

DESCRIPTORS: *Chemistry, Abstracting, *Chemical industry, *Chemical engineering, Physical chemistry, Chemical analysis, Inorganic substances, Organic compounds, Wood, Fuels, Natural gas, Petroleum, Polymers, China.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 48; NO. 9: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-10792

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 48, no. 9, p. 641-643 and 648-650.

DESCRIPTORS: Oxidation, *Allyl radicals, *Alcohols, *Acroleins, Distribution, *Lead, *Soils.

Contents:
Oxidation of allyl alcohol to acrolein, by P. V. Zimakov and V. A. Pokrovskii
Distribution of lead in soils, by S. I. Sinyakova.

Analytical Chemistry

Asmaev, P. G. and Mokhnachev, I. G.
THE SEPARATION AND IDENTIFICATION OF THE KETO ACIDS IN TOBACCO BY MEANS OF PAPER CHROMATOGRAPHY. [1962] 5p.
Order from K-H $7.25 K-H 11401-a

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Pishchevaya Tekhnol[ogiya] (USSR) 1960, no. 5, p. 160-164.
Another trans. is available from OTS or SLA $1.10 as 61-20248 [1961] 7p.

DESCRIPTORS: *Tobacco, *Ketones, *Acids, Separation, Identification, Chromatographic analysis, *Paper chromatography.

For abstract see Technical Translations 6: 890, 1961.

Bauer, Leopold.
SEPARATION OF THE CAROTENOIDS AND CHLOROPHYLLS BY PAPER CHROMATOGRAPHY. [1962] 3p.
Order from K-H $3.00 K-H-3546-g

Trans. of [die] Naturwiss[enschaften] (West Germany) 1952, v. 39, p. 88.

DESCRIPTORS: *Plant pigments, *Carotenoids, *Chlorophylls, Chromatographic analysis, Separation

Bonnet, J. and Neukomm, S.
ACTUAL RESULTS OF CHEMICAL RESEARCH ON THE COMPOSITION OF TOBACCO SMOKE. [1962] 7p.
Order from K-H $8.75 K-H-6251-a

Trans. of Oncologia (Switzerland) 1957, v. 10, Feb, p. 124-129.

DESCRIPTORS: *Tobacco, *Smokes, Chemical analysis.

Bräuniger, H.
PAPER CHROMATOGRAPHY OF ALKALOIDS [I]. [1962] 41p.
Order from K-H $52.00 K-H 3928-b

Trans. of die Pharmazie (Germany) 1954, v. 9, no. 8, p. 643-654.

DESCRIPTORS: *Alkaloids, Chromatographic analysis, *Pharmacology

Bräuniger, H.
PAPER CHROMATOGRAPHY OF ALKALOIDS, II. [1962] 50p.
Order from K-H $56.00 K-H 3963-e

Trans. of die Pharmazie (Germany) 1954, v. 9, no. 9, p. 719-734.

DESCRIPTORS: *Alkaloids, Chromatographic analysis, *Pharmacology

See also K-H-3928-b)

Bräuniger, H.
PAPER CHROMATOGRAPHY OF ALKALOIDS, III. [1962] 27p.
Order from K-H $28.00 K-H 3963-f

Trans. of die Pharmazie (Germany) 1954, v. 9, no. 10, p. 834-843.

DESCRIPTORS: *Alkaloids, Chromatographic analysis, *Pharmacology

See also K-H-3963-e

Carugno, N.
THE DETECTION AND DETERMINATION IN TOBACCO SMOKE OF SUBSTANCES DERIVED FROM THE DECOMPOSITION OF ZINC ETHYLENEBISDITHIOCARBAMATE. [1962] 8p.
Order from K-H $10.00 K-H 11537-a

Trans. of [il] Tabacco (Italy) 1961, v. 65, no. 699, p. 238-244.
Another trans. is available on loan from SLA as 62-10396 [1961] 5p.

DESCRIPTORS: *Tobacco, *Smokes, *Hydrogen compounds, *Carbon compounds, *Sulfides, Detection, Determination, Zinc, Ethylenes, Carbamates, Thio radicals, Decomposition.

For abstract see Technical Translations 7: 196, 1962.

Carugno, N., Giovannozzi-Sermanni, G., and Wittmer, G.
GAS-CHROMATOGRAPHIC ANALYSIS OF TOBACCO OILS AND PRELIMINARY OBSERVATIONS ON THE CYTOLOGIC ACTIVITY OF SOME OF THEIR COMPONENTS. [1962] 12p.
Order from K-H $15.00 K-H 11537-b

Trans. of il Tabacco (Italy) 1961, v. 65, no. 699, p. 219-228.
Another trans. is available on loan from SLA as 62-10395 [1961] 8p.

DESCRIPTORS: *Tobacco, *Seeds, *Oils, Gas chromatography, Histology.

For abstract see Technical Translations 7: 196, 1962.

Cuzin, J. and Schwartz, D.
PHOTOCOLORIMETRIC MICRODETERMINATION OF NICOTINIC BASES IN GREEN TOBACCO. [1962] 11p.
Order from K-H $13.75 K-H 3180-b

Trans. of Inst[itut] Exp[erimental du] Tabac. Ann[ales] (France) 1952, v. 1, no. 3, p. 61-69.

DESCRIPTORS: Photochemistry, *Colorimetric analysis, *Nicotine, *Tobacco, Microanalysis.

Decker, C., Girardet, A. and others.
MULTIPLE AUTOMATIC APPARATUS FOR THE DETERMINATION OF NICOTINE AND TARS IN CIGARET SMOKE. [1962] 8p.
Order from K-H $10.00 K-H 3799-a

Trans. of Mitt[eilungen aus dem Gebiete der] Lebensm[itteluntersuchungen und] Hyg[iene] (Switzerland) 1955, v. 46, p. 178-182.

DESCRIPTORS: *Nicotine, *Cigarettes, Smokes, Determination.

Dezelic, M. and Stancic, B.
CONDUCTOMETRIC AND POTENTIOMETRIC TITRATION OF NICOTINE. I. ELECTROCHEMICAL TITRATION OF NICOTINE WITH ACETIC ACID AND SUBSTITUTED ACETIC ACIDS. [1962] 18p.
Order from K-H $22.50 K-H 3183-b

Trans. of [Croatica Chemica Acta] (Yugoslavia) 1953, v. 25, p. 141-150.

DESCRIPTORS: *Nicotine, *Acetic acids, *Titration, Electrolytic titration, Electrochemistry.

Fleckenstein, A., Janke, J., and Elke, M.
PAPER CHROMATOGRAPHIC SEPARATION OF ADENOSINE TRIPHOSPHATE AND OTHER PHOSPHORUS COMPOUNDS IN THE CAFFEINE CONTRACTION OF THE FROG AND TOAD RECTUS. [1962] 23p.
Order from K-H $28.75 K-H 4520

Trans. of [Naunyn-Schmiedeberg's] Arch[iv für] Exper[imentelle] Path[ologie] u[nd] Pharmakol[ogie] (West Germany) 1954, v. 221, p. 404-417.

DESCRIPTORS: *Phosphorus compounds, *Adenosine phosphates, Chromatographic analysis, Separation, Caffeine, *Muscles, Amphibians, Frogs, *Physiology

Lettre, H., Jahn, A., and Hausbeck, Ch.
DETECTION OF 3,4-BENZOPYRENE AMONG THE" SMOKE PRODUCTS [1962] 3p.
Order from K-H $3.75 K-H 5299-b

Trans. of Angew[andte] Chemi[e] (West Germany) 1956, v. 68, p. 212-213.

DESCRIPTORS: *Smokes, *Hydrocarbons, Chemical analysis, *Benzopyrene, Detection.

Luther, H. and Ölert, H. H.
GROUP ANALYSIS OF SATURATED HYDROCARBONS BY MOLECULAR SPECTROSCOPY. [1962] 10p.
Order from ATS $12.50 ATS-48P61G

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1961, v. 183, p. 161-172.

DESCRIPTORS: *Hydrocarbons, Analysis, *Molecular spectroscopy, Spectrographic analysis

Pechanec, V. and Horacek, J.
USE OF THE MANOMETRIC METHOD IN ORGANIC ANALYSIS. I. MICRODETERMINATION OF ACTIVE HYDROGEN. 9 Mar 62 [15]p. 27 refs.
Order from SLA $1.60 62-16071

Trans. of [Sbornik Chekhosiovatskykh Khimicheskykh Rabot] 1961, v. 26, p. 1805-1813.

DESCRIPTORS: *Organic compounds, *Manometers, Solids, Liquids, *Hydrogen, *Microanalysis, Microchemistry, Determination.

A simple manometric method for the microdetermination of active hydrogen in solid and liquid organic substances, using a Warburg manometer with a modified vessel, suitable for crushing capillaries, has been developed. The sample weights were between 0.5-2mg and the deviations of results from theory did not exceed ±0.02%.

Raines, M. M., Perogova, O. I., and Andreeva, M. V.
DIRECT POTENTIOMETRIC TITRATION OF FLUORIDES [Pryamoe Potentsiometricheskoe Titrovanie Ftoridov]. [1962] 4p. 6 refs.
Order from OTS or SLA $1.10 62-14041

Trans. of Zavodskaya Lab[oratoriya] (USSR) 1955, v. 21 [no. 2] p. 152-154.
Also available from SLA as RT-3821.

DESCRIPTORS: Potentiometers, *Titration, *Fluorides, Thorium compounds, Nitrates, Chlorine, Determination, Halogens, *Electrolytic titration.

Rudenko, B. A., Kucherov, V. F. and others.
GAS-LIQUID CHROMATOGRAPHY OF ISOPRENOID COMPOUNDS. [1962] 9p.
Order from ATS $9.00 ATS-06P62R

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1962, no. 2, p. 236-243.

DESCRIPTORS: *Pentadienes, *Chromatographic analysis, Gas chromatography

Sauvenier, Gh. and Duyckaerts, G.
POLAROGRAPHIC ANALYSIS OF GERMANIUM IN GERMANIFERROUS MINERALS AND CONCENTRATES. [1962] [6]p. 3 refs.
Order from SLA $1.10 62-16068

Trans. of Analytica Chimica Acta (Netherlands) 1957, v. 16, p. 592-596.

DESCRIPTORS: *Germanium, Polarographic analysis, Solvent extraction, Chemical equilibrium, Electrolytes.

A method is given for the analysis of germanium combining the extraction of $GeCl_4$ by CCl_4 and the polarographic determination of Ge^{IV}. After a systematic study of the distribution coefficient of germanium between carbon tetrachloride and an aqueous solution versus the normality in hydrochloric acid and the quantity of germanium, the conditions of extraction in view to obtain quantitative separation are determined. The method has been tried on a great variety of germanium samples of complex kind in which the content of germanium varies from 0.001 to some 10%. The results obtained are reproducible within 0.5 to 2.0%. (Author)

Tarakanov, O. G. and Gusev, I. G.
THE USE OF THERMISTORS FOR THE DETERMINATION OF MOLECULAR WEIGHTS. 29 Jan 61 [6]p. 5 refs.
Order from OTS or SLA $1.10 62-14987

Trans. of Plasticheskie Massy (USSR) 1961, no. 11, p. 47-48.

DESCRIPTORS: *Molecular weight, Determination, *Thermistors, Polymers, Ethers.

The use of the Müller-Stolten method is promising for the determination of MW of chemical compounds from 200 to 5000. (Author)

Inorganic Chemistry

Andress, Karl R. and Nachtrab, Reimar.
THE BOND CONDITIONS IN METAL-POLYPHOSPHATE COMPLEXES. [Pt. 2 of] Complex Formation by Sodium Triphosphate with Divalent Metal Ions. [1962] 13p. 8 refs.
Order from SLA $1.60 62-14975

Trans. of Z[eitschrift für] Anorganische] Chem[ie] (East Germany) 1961, v. 311 [no. 1/2] p. 13-21.

DESCRIPTORS: *Chemical bonds, *Complex compounds, *Metallic compounds, *Sodium compounds, *Phosphates, Phosphoric acids, Ions, Hydrolysis.

The metal-oxygen (Me-O) compounds such as occur in metal-polyphosphate complexes on terminal and intermediate PO_4 tetrahedra of phosphate chains are discussed in detail. It is found that the stability of such Me-O bonds depend primarily on how many free corners a PO_4 tetrahedron can still exhibit in a metal-polyphosphate complex. (Author)

Andress, Karl R. and Nachtrab, Reimar.
THE COMPLEX-FORMING REACTION BETWEEN SODIUM TRIPHOSPHATE AND DIVALENT METAL IONS. Pt. 3 of Complex Formation by Sodium Triphosphate with Divalent Metal Ions. [1962] 19p. 3 refs.
Order from SLA $1.60 62-14974

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1961, v. 311 [no. 1/2] p. 22-31.

DESCRIPTORS: *Chemical bonds, *Complex compounds, *Metallic compounds, *Sodium compounds, *Phosphates, Ions, Chemical reactions, Chemical equilibrium.

From the experimentally determined complex formation constants of the Me (II)-triphosphate complexes, the equilibrium constants for the reaction of the formation of this complex were calculated. From the size and pH dependence of these constants, statements can be made on the complex formation reactions actually occurring in the solution and on the structures of the Me (II)-triphosphate complexes formed thereby. (Author) (See also 62-14975)

Batsanov, S. S. and Petrova, I. Kh.
MIXED THALLIUM CHALCOGENIDES, III. [1961]
4p. 5 refs. MDF B-180.
Order from OTS $0.50 62-11562

Trans. of A[kademiya] N[auk] SSSR. Sib[irskoe] Otd[elenie]. Izv[estiya] 1960, no. 7, p. 121-123.

DESCRIPTORS: *Thallium compounds, *Selenides, *Tellurides, *Sulfides, Synthesis.

Four compounds of trivalent thallium with mixed anions: Tl_2SSe_2, Tl_2STe_2, Tl_2SeS_2 and Tl_2SeTe_2 were synthesized and their physical chemical properties investigated. (Author)

Royen, P. and Reinhardt, H.
INFLUENCING THE OXIDATION EQUILIBRIUM OF IRON BY ADDITION OF GOLD, SILVER, COPPER OR NICKEL. [1962] 1p.
Order from SLA $1.10 62-16642

Abstract trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1955, v. 281, no. 1/2, p. 18-36.

DESCRIPTORS: *Iron, Chemical equilibrium, Oxidation, *Gold, *Silver, *Copper, *Nickel, Additives.

Thilo, Erich.
RESEARCH IN INORGANIC CHEMISTRY AT THE CHEMICAL INSTITUTE OF BERLIN UNIVERSITY, HESSISCHE STRASSE. 25 Oct 61 [28]p. JPRS: 10820.
Order from OTS or SLA $2.60 62-19720

Trans. of Zeitschrift für Chemie (East Germany) 1961, v. 1, no. 4, p. 97-105.

DESCRIPTORS: *Inorganic substances, *Chemistry, *Chemists, History, Scientific research, East Germany.

Ukaji, Rokuo.
ON THE REACTIVITY OF URANOURANIC OXIDE. I. THE THERMAL DECOMPOSITION OF URANYL NITRATE (UNH) AMMONIUM DIURANATE (ADU) AND URANIUM PEROXIDE (UPO). June 62, 14p. 18 refs.
Order from OTS $0.50 AEC-tr-4939

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1959, v. 1, p. 405-411.

DESCRIPTORS: *Uranium compounds, Oxides, *Chemical reactions, Decomposition, *Uranyl radicals, Nitrates, *Peroxides, *Ammonium radicals, Uranates, X-ray diffraction analysis.

In the course of thermal decomposition of uranyl nitrate, UO_3 with nearly monoclinic system is produced. In the case of ammonium diuranate, UO_3 showing new diffraction lines is produced. In the case of uranium peroxide (UPO), amorphous UO_3 is produced. In the case of UPO, also, the stage of UO_3 is reached through the stage of $UO_3 H_2O$. At temperatures above 600°C, U_3O_8 is produced in all cases. (Author) (See also 62-11729)

Ukaji, Rokuo.
ON THE REACTIVITY OF URANOURANIC OXIDE. II. THE REACTIVITY OF URANOURANIC OXIDES PREPARED BY THERMAL DECOMPOSITION OF URANYL NITRATE, AMMONIUM DIURANATE AND URANIUM PEROXIDE. Feb 62, 13p. 19 refs.
Order from OTS $0.50 AEC-tr-4941

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2, p. 117-121.

DESCRIPTORS: *Uranium compounds, Oxides, *Chemical reactions, *Uranyl radicals, Nitrates, *Peroxides, *Ammonium radicals, Uranates, Decomposition, Hydrogen, Reduction, Oxidation, Fluorination.

Differences in the reactivity were examined of three kinds of uranouranic oxides prepared respectively from uranyl nitrate, ammonium diuranate and uranium peroxide (named U_3O_8 I, II, III respectively). The examination was based on the velocities in the reactions of hydrogen reduction, fluorination and oxidation (all under normal pressure). The effects of nitrogen, iron, nickel, silicon and thorium on reactivity were also surveyed. (See also 62-11726)

Organic Chemistry

JOURNAL OF GENERAL CHEMISTRY, 1961, VOL.31, NOS. 7, 9-11; SELECTED ARTICLES. 1 May 62 [116]p. 120 refs. JPRS: 13630.
Order from OTS or SLA $9.60 62-24386

Trans. of #Zhurnal Obshchei Khimii (USSR) 1961, v. 31, no. 7, p. 2192-2198, 2316-2321; no. 9, p. 2851-2853, 2983-2984; no. 10, p. 3202-3205, 3251-3255, 3281-3287, 3316-3319, 3469-3477; no. 11, p. 3571-3585, 3605-3610, 3750-3756.

DESCRIPTORS: *Methyl radicals, *Complex compounds, Acetic acids, *Heterocyclic compounds, Benzoates, *Pyridoxine, Vitamins, *Esters, *Carboxylic acids, *Pyridines, Alkyl radicals, *Phosphines, *Octanes, Quinine, Isomers, Carbonyl radicals, *Ketones, *Insecticides, Fungicides, Phosphoric acids, Amines, *Borines.
Contents:
Study of pyrylium compounds that have active methyl groups, by N. V. Khromov-Borisov and L. A. Gavrilova
Substances with complex-forming properties, by V. G. Yashunskii and others
Heterocyclic compounds, by A. Sh. Sharifkanov and T. G. Sarbaev
Synthetic studies in the field of vitamins of the B_6 group, by M. V. Balyakina and others
Bicyclic systems on a basis of 2, 6 lutidine, by E. S. Nikitskaya and others
Synthesis of quinuclidine -2, 3-dicarboxylic acid, by E. E. Mikhlina and others
Derivatives of 7-azaindole, by L. N. Yakhontov and M. V. Rubtsov
Some unsymmetric derivatives of alkylphosphinic acid, by E. L. Gefter
Derivatives of 1-azabicyclo-(3, 2, 1)-octane, analogous to quinine alkaloids, by A. K. Chizhov
Synthesis of geometric isomers of 1, 2, 5-trimethyl-4-hydroxy-4 piperidylmethylaryl-and 1, 2, 5-trimethyl-

4-hydroxy-4-piperidyldiaryl carbinols, by B. V. Unkovskii and others

Synthesis of geometric isomers of 1, 2, 5-trimethyl-4-aryl-4-piperidyl methyl and 1, 2, 5-trimethyl-4-aryl-4-piperidyl aryl ketones, by B. V. Unkovskii and I. A. Mokhir

From the field of organic insectofungicides, by N. N. Mel'nikov and others

Organoboron compounds, by B. M. Mikhailov and V. A. Dorokhov.

PROCESS FOR PREPARING COPOLYMERS, tr. by F. H. B. 25 June 62, 8p.
Order from OTS or SLA $1.10 62-25685

Trans. of French patent 1,061,133, gr. 14, cl. 8, by Badische Anilin & Soda-Fabrik (I. G. Farbenindustrie Aktiengesellschaft, Germany) appl. 31 July 52, granted 25 Nov 53, pub. 8 Apr 54, (applications: one for pat. 14 Aug 51 and one for add. pat. 29 Mar 52 filed Germany, statement of applicant).

DESCRIPTORS: Polymers, Esters, Ethylenes, Styrenes, Acrylic resins, Methyl radicals, *Copolymerization, Polymerization.

The present invention relates to a process for preparing copolymers from unsaturated ployesters and ethylenic derivatives. Substances forming a skin on the surface of these mixtures are added to the mixtures to be polymerized. At least one of the constituents of the styrene accelerators employed to promote the polymerization is applied separately from the mixture of unsaturated polyesters, ethylenic derivatives, and skin-forming substances. The present invention relates likewise, on the one hand, to novel industrial products prepared by means of the aforementioned process and, on the other hand, to their industrial applications. (Author)

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 46, NO. 8: [TABLE OF CONTENTS AND SELECTED ABSTRACT]. [1962] 2p.
Order from OTS or SLA $1.10 62-10783

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1945, v. 46, no. 8, p. 325-327.

DESCRIPTORS: *Acetyl radicals, *Chlorides, *Cellulose, Acetylation, Abstracting.

Contents:
A new method of acetylation of cellulose with acetyl chloride, by P. V. Popov.

UKRAINIAN REPUBLIC CONFERENCE ON ORGANIC CHEMISTRY (NO. 7) KHARKHOV, 9-13 OCT 61. 6 Aug 62, 17p. JPRS: 14745.
Order from OTS $0.50 62-11720

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1962, v. 28, no. 3, p. 412-417.

DESCRIPTORS: *Conferences, *Organic compounds, Molecular structure, Chemical reactions, Synthesis, Dyes, Polymers, Physical chemistry.

Berti, Giancarlo.
CONCERNING THE PROPERTIES OF DIBENZO (a, e) TROPYLIUM AND 5-PHENYLDIBENZO (a, e) TROPYLIUM. Nov 61 [27]p. [refs. omitted].
Order from SLA $2.60 62-14355

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1957, v. 87 [no. 3] p. 293-309.

DESCRIPTORS: *Cycloheptatriene derivatives, Benzoyl radicals, Phenyl radicals, Chemical properties, Spectrographic analysis, Dissociation, *Tropylium compounds.

The behavior is dismissed of sulfuric acid solutions of dibenzo [a, e] cycloheptatriene-5-ole and its 5-phenyl derivative, in which the dibenzotropylium and 5-phenyl-dibenzotropylium ions are present. Some reactions of these ions are reported, as well as the absorption spectra and $pK_R +$ values. It is observed that these ions show even in a very reduced manner the stability characteristics of the tropylium derivatives and that the dibenzotropylium ion is more stable than its 5-phenyl derivative, although the opposite has been shown in transposing from the benzhydrylium to the triphenylcarbonium ion. The possible explanations for this difference are considered. (Author)

Borlera, Maria Lucco.
POLAROGRAPHIC REDUCTION OF TETRAVALENT GERMANIUM IN A SOLUTION OF COMPLEXANT ORGANIC ACIDS. [1962] 9p. 8 refs.
Order from SLA $1.10 62-16129

Trans. of la Ricerca Scientifica (Italy) 1959, v. 29, no. 1, p. 100-105.

DESCRIPTORS: *Germanium, Solutions, *Organic acids, Polarographic analysis, Reduction.

An investigation was made of the polarographic reduction of tetravalent germanium in solution of complexant organic acids, i. e.: salicylic, oxalic and tartaric acids. Values are given of coefficients and constants of the diffusion current obtained by operating in the various media and gives the optimum pH range in which the mercury cathode reduction assumes an analytical significance.

Bruker, A. B., Bobkov, S. S., and Frenkel', R. I.
A METHOD OF STABILIZING CYANOGEN CHLORIDE. [1962] 2p.
Order from ATS $4.35 ATS-74P61R

Trans. of USSR patent 139,309 [1960].

DESCRIPTORS: *Cyanogen chlorides, Stabilization, Chlorides.

Dashevskaya, B. I. and Levitskaya, I. B.
TRANSFORMATIONS IN THE TEREPHTHALIC ACID SERIES. [1962] 4p. 7 refs.
Order from OTS or SLA $1.10 62-16232

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1950, v. 16, p. 616-619.

DESCRIPTORS: Transformations, *Phthalic acids, Benzenes, Acetates, Acetic acids, Amides.

Two alternate syntheses of the diacetate of 1,4-diglycolybenzene are realized. (Author)

Dikun, P. P.
SPECTROPHOTOMETRIC METHOD FOR APPROXIMATE DETERMINATION OF THE CONCENTRATION OF 3,4-BENZOPYRENE IN A MIXTURE OF UNKNOWN COMPOSITION. [1962] 9p.
Order from K-H $11.25 K-H 6769-a

Trans. of [Voprosy Onkologii (USSR) 1955, v. 1, no. 4, p. 34-38].

DESCRIPTORS: *Benzopyrene, Determination, Mixtures, *Spectrophotometers.

Drinberg, A. Ya., Fundyler, B. M. and others.
COPOLYMERS OF STYRENE AND DERIVATIVES OF MALEIC ACID. [1962] 7p.
Order from ATS $7.50 ATS-53P61R

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1959, v. 32, no. 6, p. 1348-1353.

DESCRIPTORS: *Copolymerization, *Styrenes, *Maleic acid.

Ginsburg, V. A., Yakubovich, A. Ya. and others.
PRODUCTION, PYROLYSIS AND PHOTOLYSIS OF POLYFLUORINATED AZO COMPOUNDS OF THE ALIPHATIC SERIES, tr. by B. W. Kuvshinoff.
22 May 62, 8p. 6 refs. APL/JHU TG 230-T299.
Order from OTS $0.50 62-11686

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 1, p. 88-91.
Another trans is available from OTS or SLA $1.10 as 62-14992, 22 Mar 62 [8]p.

DESCRIPTORS: Azo compounds, Fluorination, Production, *Pyrolysis, *Photolysis, Polymers, Fluorine compounds, *Azo radicals.

Ito, Heihachiro, Sekiguchi, Ichiro, and Negishi, Michiharu.
[RESEARCHES] ON POLYVINYL CYANOETHYL ETHER. III. ON THE TRANSITION TEMPERATURE OF POLYVINYL ALCOHOL AND POLYVINYL CYANOETHYL ETHER. [1962] 14p. 24 refs.
Order from SLA $1.60 62-14973

Trans. of Kogyo Kagaku Zasshi (Japan) 1956, v. 59, no. 7, p. 834-837

DESCRITPROS: *Polymers, Copolymerization, *Vinyl radicals, *Cyano radicals, *Ethyl ethers, *Vinyl alcohol, Synthesis, *Transition temperature, Temperature, Melting, Density, Alcohols.

Measurement of secondary transition point and coefficient of cubic expansion by the dilatometer, of the melting point by the standard method, and of the specific gravity by the sink and float method were conducted on PVA and PVCE of various degrees of reaction of up to degree of cyanoethylation 100 mol%, synthesized from the former by a homogenous system reaction. In all samples of PVA and PVCE, four secondary transition points ($_1$, $_2$, $_3$, and $_4$, respectively, from the lower temperature side) were found below the melting point, in the range of from normal temperature to about 200°C. Together with the melting point, these secondary transition points dropped as the degree of cyanoethylation increased, and it was seen that the Gordon-Taylor equation could be applied to the relationship between the copolymer composition and the secondary transition point on the lowest temperature side ($_1$). Results satisfying the basis of this equation were also obtained between the copolymer composition and the specific gravity. As the ratio between the melting point T_m(°K) and the secondary transition points (°K), constant values irrespective of the composition were obtained for each of the four transition points. T_m/ $_1$ 1.5 in the case of $_1$. (Author) (See also 62-14970)

Kudryavtsev, G. I., Klimenikov, V. S. and others.
A METHOD FOR OBTAINING COPOLYMERS OF ACRYLONITRILE. 2 May 62 [4]p. FTD-TT-62-293.
Order from OTS $0.50 62-11713

Unedited rough draft trans. of Soviet patent 138373 (672808/23) 11 July 60.

DESCRIPTORS: *Acrylonitriles, *Copolymerization, *Polymers, Polymerization, Acrylic resins, Methyl radicals, Sodium compounds, Thiocyanates, Cynates, Hydrozines, Hydrates, Chemical reactions.

It is proposed to copolymerize acrylonitrile with methyl acrylate in aqueous solution of sodium thiocyanate in the presence of 1 to 10% hydrazine hydrate. Copolymerization is carried out with a starting ratio of acrylonitrile and methyl acrylate of 94.6 wt%. The concentration of the monomers on solution is 14% and the amount of hydrazine hydrate is 1 to 3% of the weight of the monomers. The concentration of sodium thiocyanate is 50%. Azodiisobutyronitrile, 0.1% of the weight of the solution, is used as initiator. Copolymerization is carried out with continuous agitation for 2 hr at 70°C. The yield is 63 to 65% and the specific viscosity of a 5% solution in dimethylformamide is 0.8. The concentration of the fiber-yielding solution is 12%. The fibers can be dyed deep hues by the principal acid and acetate dyes.

Landrum, B. F.
THE DEVELOPMENT OF ELASTOMERS ON A FLUOROCHEMICAL BASIS. [1962] 2p.
Order from SLA $1.10 62-14018

Abstract trans. of unidentified article, n.p., n.d.

DESCRIPTORS: *Elastomers, Polymers, Synthetic rubber, *Fluorination.

Moiseev, V. D. and Neiman, M. B.
MOLECULAR WEIGHT, NUMBER OF DOUBLE BONDS, AND MECHANISM OF THERMAL DEGRADATION OF VINYL POLYMERS. [1962] 7p.
Order from ATS $11.25 ATS-15P59R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 9, p. 1383-1388.
Another trans. is available from CTS(Chem) $9.00 subsequent copies $1.50 as CTS(Chem)-261 [1962] 9p.

DESCRIPTORS: *Polymers, *Vinyl radicals, Molecular weight, Chemical bonds, Deterioration, Temperature, Molecules, Atoms, Molecular isomerism.

Negishi, Michiharu, Sekiguchi, Ichiro and others.
RESEARCHES ON POLYVINYL CYANOETHYL ETHER. II. A STUDY ON THE VISCOSITY OF POLYVINYL CYANOETHYL ETHER IN DILUTE AQUEOUS SOLUTION. [1962] 14p. 11 refs.
Order from SLA $1.60 62-14970

Trans. of Kobunshi Kagaku (Japan) 1956, v. 13, no. 130, p. 69-76.

DESCRIPTORS: *Polymers, Copolymerization, *Vinyl radicals, *Cyano radicals, *Ethyl ethers, Viscosity, Water, Solutions, Vinyl alcohol, Alcohols.

Viscosity measurement was conducted on dilute aqueous solutions of PVCE with N content of 0 to 8%, obtained by the water solution-phase cyanoethylation method (NaCN catalyst) using fractionated PVA as the raw material. Across the entire N-content range, as the temperature rose (5° to 60°C) the intrinsic viscosity $[\eta]$ decreased and the Huggins constant k' increased. A maximum of $[\eta]$ and minimum of k' appeared at N-content of 5 to 6% (degree of reaction, about 20 mol%). Solutions of high degree-of-reaction PVCE, close to the limit of water-solubleness (degree of reaction, over about 25 mol%) tended to depart from the linear relationship of η_{sp}/C or $\ln \eta_{sp}/C$ to C in the low-concentration region, especially above 30°C, and demonstrated a poor solvent behavior. Hygroscopicity of solid films presented a maximum at N-content of 5 to 6%. Also, $[\eta]$-, k' - N content relationships similar to those obtained by the liquid phase method were found in the case of water-soluble PVCE which had been obtained by the vapor phase cyanoethylation (NaOH catalyst) of unfractionated PVA powder in a water-swollen state. The precipitation temperature which was observed in relatively high degree-of reaction PVCE aqueous solutions was, at a given same degree of reaction, on the lower temperature side by vapor phase synthesis than by the liquid phase method. This was probably due mainly to the ununiformity of the former reaction. (Author) (See also 62-14971)

Nikolaev, Yu. T.
THE RIGA CONFERENCE ON HETEROGENEOUS CATALYTIC OXIDATION OF ORGANIC COMPOUNDS. 10 Apr 62 [7]p. JPRS: 13471.
Order from OTS or SLA $1.10 62-23996

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 5, p. 803-805.

DESCRIPTORS: *Organic compounds, *Oxidation, *Catalysis, Catalysts, Conferences.

Razuvaev, G. A., Latyaeva, V. N., and Vyshinskaya, L. I.
REACTIONS OF BENZOYL PEROXIDE WITH TITANOCENE DERIVATIVES [Reaktsii Perekisi Benzoila s Proizvodnymn Titanotsena]. 29 Sep 61 [7]p. 3 refs.
Order from OTS or SLA $1.10 62-14628

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138 [no. 5, p. 1126-1129].

DESCRIPTORS: *Benzoyl radicals, *Peroxides, Metal-organic compounds, *Titanium compounds, *Cyclopentadiene, Pentadienes, Chemical reactions, Benzoates, Benzenes, Propanols, Alcohols.

No breakdown of the titanocene group took place in the reaction of benzoyl peroxide with Cp_2Ti in the cold in benzene or isopropanol solution. There was an instantaneous change in the color of the solution from dark green to bright yellow; no CO_2 was evolved in the course of the reaction. The yellow, crystalline product obtained in an atmosphere of dry nitrogen was dicyclopentadienyltitanium dibenzoate:

$$Cp_2Ti + (C_6H_5COO)_2 \rightarrow Cp_2Ti(OCOC_6H_5)_2$$

The dicyclopentadienyltitanium dibenzoate was characterized by elemental analysis and determination of molecular weight, melting point, and content of benzoate groups. $Cp_2Ti(OCOC_6H_5)_2$ hydrolyzes extremely easily with breakdown of the titanocene-salt molecule and formation of cyclopentadiene, benzoate, and titanic acid. Cyclopentadiene, acetone, and benzoic acid were found in the reaction products. In an atmosphere of moist air, the molecule of titanocene dibenzoate gives up two moles of cyclopentadiene and can be converted to dibenzoxytitanium oside. An analogous representative of compounds of the type $Cp_2Ti(OCOR)_2$ was obtained by the reaction of titanocene dichloride with silver acetate. The yellow compound formed by this reaction has m.p. 127-130°, and by elemental analysis corresponds to dicyclopentadienyltitanium diacetate.

Shatenshtein, A. I.
ISOTOPIC EXCHANGE AND THE REPLACEMENT OF HYDROGEN IN ORGANIC COMPOUNDS. [1962] 324p.
Order from CB $19.50

Trans. of mono. [Izotopnyi Obmen i Zameshchenie Vodoroda v Organicheskikh Soedineniyakh v Svete Teorii Kislot i Osnovanii, Moscow, 394p.].

DESCRIPTORS: *Isotopes, *Deuterium, Organic compounds, *Organic solvents, Hydrocarbons, *Ammonia, *Halides, *Hydrogen, *Exchange reactions, Catalysis, Chemical bonds, Acid-base equilibrium.

Tsvetkova, V. I., Pirogov, O. N. and others.
KINETICS AND MECHANISM OF OLEFINS POLYMERIZATION ON COMPLEX CATALYSTS. I. THE KINETIC EQUATIONS AND RATE CONSTANTS OF α-OLEFINS POLYMERIZATION ON THE SYSTEM $TiCl_3$ - $Al(C_2H_5)_3$ FOR DIFFERENT MANNERS OF ACCOMPLISHING THE PROCESS. [1962] 11p. 5 refs.
Order from OTS or SLA $1.60 62-14819

Trans. of Vysokomolekulyarnye Soed[ineniya] (USSR) 1961, v. 3, no. 4, p. 585-593.

DESCRIPTORS: *Ethylenes, *Polymerization, Reaction kinetics, Titanium compounds, Chlorides, Aluminum, Ethyl radicals, Catalysts, Catalysis.

The kinetic equations are derived for various methods of investigating α-olefin polymerization on $TiCl_3$-$Al(C_2H_5)_3$ catalysts. On the basis of the equations a comparison can be made of the rate constants and of the activities of various $TiCl_3$ specimens for different experimental procedures.

Vecera, M.
AUTOMATIC DETERMINATION OF NITROGEN IN ORGANIC SUBSTANCES. 15 Jan 62 [12]p. 14 refs.
Order from SLA $1.60 62-16072

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1961, v. 26, p. 2308-2314.

DESCRIPTORS: *Nitrogen, Determination, Thermal conductivity, Combustion, *Organic compounds, Microchemistry, Automatic.

A new method for automatic nitrogen determination, based on flash ignition of samples in the presence of cobalt (II, III) oxide in a stream of CO_2, has been developed. Nitrogen in the carrier gas is determined by direct measurement of thermal conductivity changes. The standard deviation of the nitrogen determination is $s = \pm 0.27\%$. In a second modification of the method, which is also suitable for the analysis of liquid compounds, combustion is carried out in a closed system. (Author)

Wilke, G. and Kröner, M.
SYNTHESIS OF CYCLODODECATRIENE AND AROMATIC COMPLEXES. [1962] 1p.
Order from SLA $1.10 62-16744

Trans. of article from an unidentified source, n.d.

DESCRIPTORS: *Complex compounds, Benzenes, Chromium catalysts, Aluminum compounds, Chlorides, Chemical reactions.

During the reaction of aluminum triethyl with chromyl chloride in absolute benzene, very finely divided suspensions of low-valency chromium compounds were formed in a mixture with aluminum-organic compounds. When butadiene is added to such a suspension, with vigorous stirring and at 40°C and normal pressure, a mixture of 40% trans, trans, cis-cyclododecatriene-(1, 5, 9) (Fp-18°C) and 60% all-trans-cyclododecatriene-(1, 5, 9) (Fp+34°C) is formed. The primary step of this cyclododecatriene synthesis consists of the formation of a π-electron complex of three butadiene molecules with the transition metal atom of the catalyst. In this complex, the three new C-C bonds are formed. The cyclododecatriene detaches itself subsequently from the chromium atom so that new butadiene molecules may approach. A similar but stable π-electron complex was obtained with the chromium atom of our cyclization catalyst. Six butine-(2) molecules interacted with each chromium atom of the cyclization catalyst, so that two aromatic systems were formed, which, in statu nascendi, led to the stable aromatic complex.

Physical Chemistry

JOURNAL OF PHYSICAL CHEMISTRY, 1944, VOL. 18, NO. 9: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 4p. 9 refs.
Order from OTS or SLA $1.10 62-10837

Abstract trans. of Zhurnal Fizicheskoi Khimii (USSR) 1944, v. 18, no. 9, p. 329-334, ##364-379, 383-385, 405-407.
##A complete trans. is available in French from OTS or SLA $4.60 as 61-15792, CEA-tr-R1024, 22 Oct 60 [50]p.

DESCRIPTORS: *Physical chemistry, Abstracting, *Acetylenes, *Polymerization, Nitrogen compounds, *Equations of state, Gases, Adsorption, Charcoal, Solutions, *High pressure research, *Eutectics, Azo radicals, Phenyl radicals, Naphthalenes, Chemical reactions, Reaction kinetics, Benzenes.
Contents:
Thermal reactions of acetylene. I. Kinetics and mechanism of thermal polymerization of acetylene and its reactions with nitric oxide, by D. Z. Frank-Kamenetskii
##Equation of state for gaseous mixtures, by Ya. S. Kazarnovskii
Adsorption from solution under high pressure, by A. M. Rozen
Eutectic in the system azobenzene-naphthalene, by A. S. Klyuchevich and V. M. Nebogatikov.

Azatyan, V. V., Panilov, V. N., and Nal'bandyan, A. B.
EPR DETECTION OF H ATOMS IN CO-O FLAME IN THE PRESENCE OF MOLECULAR H, tr. by B. W. Kuvshinoff. 24 Oct 61, 2p. 5 refs. APL/JHU TG 230-T253.
Order from OTS $0.50 62-11081

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2 [no. 2] p. 295-[296].

DESCRIPTORS: *Paramagnetic resonance, Atoms, *Detection, *Hydrogen, Oxygen, *Carbon compounds, Monoxides, Oxygen, *Combustion, *Flames, Molecules.

Burkat, S. E.
THE REACTION OF NICOTINE WITH SALTS OF MEATALS. I. THE REACTION OF NICOTINE WITH COBALT THIOCYANATE. [1962] 5p.
Order from K-H $6.25 K-H 3189-a

Trans. of Zhur[nal] Obshchei Khim[ii] (USSR) 1953, v. 23, p. 161-163.

DESCRIPTORS: *Nicotine, Metals, Salts, *Chemical reactions, *Cobalt compounds, *Cyanatis, Thio radicals, Reaction kinetics.

Candea, C. and Murgulescu, I. G.
THE ACTION OF METHANE ON SODIUM CHLORIDE (Action du Méthane sur le Chlorure de Sodium). [1962] [16]p. (foreign text included) 17 refs.
Order from SLA $1.60 62-14427

Trans. of mono. (paper) from Congr[ès de] Chim[ie] Ind[ustrielle] (no. 14) [held at Paris] Oct 34.

DESCRIPTORS: *Chlorides, Sodium compounds, *Methanes, Hydrogen, High temperature research, Chemical reactions

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Efimov, E. A. and Erusalimchik, I. G.
ANODIC DISSOLUTION OF SILICON IN HYDROFLUORIC ACID. [1961] 7p. 5 refs. MDF E-113.
Order from OTS $0.50 62-11265

Trans. of #Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1961, v. 35, no. 2, p. 384-388.

DESCRIPTORS: *Silicon, Electrolysis, Electrochemistry, *Hydrogen compounds, Fluorides, Acids.

The anodic dissolution process of p- and n-type silicon in a 2.5 N hydrofluoric acid solution was investigated by polarization and capacitance measurements. It was shown that the kinetics of anodic dissolution of silicon is limited by the generation of holes in the space charge layer of the semiconductor on the interface with the electrolyte. The differential capacity of a silicon electrode is considerably lower than for germanium, where the large width of the space-charge band in n-type silicon leads to a smaller value of the differential capacity as compared to the p-type silicon. Surface phase oxides of different composition form on p- and n-type silicon at the same current density. A hypothesis is made on the potentials of their formation.

Efimov, E. A. and Erusalimchik, I. G.
ANODIC DISSOLUTION OF GERMANIUM IN THE PRESENCE OF REDUCING AGENTS. [1961] 6p. 4 refs. MDF E-114.
Order from OTS $0.50 62-11256

Trans. of #Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1961, v. 35, no. 3, p. 543-547.

DESCRIPTORS: *Germanium, Electrolysis, Electrochemistry.

The kinetics of the anodic dissolution of n-type germanium in 0.1 N HCl in the presence of reducing agents has been studied by the method of polarization measurements on thin germanium electrodes with a p-n junction. It is shown that the acceleration of the germanium dissolution reaction upon the introduction of $C_2O_4^{2-}$ and I^- type reducing agents into the solution occurs mainly because of the additional flow of holes from the depths of the semiconductor to its surface. This flow of holes is caused by the effect of the electric field which arises as a result of the injection of electrons in the germanium during oxidation of the reducers. (Author) (See also 62-11265)

Efimov, E. A. and Erusalimchik, I. G.
HYDROGEN EVOLUTION ON A GERMANIUM CATHODE. [1960] 5p. 8 refs. MDF E-112.
Order from OTS $0.50 62-11266

Trans. of #Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1960, v. 34, no. 12, p. 2804-2807.

DESCRIPTORS: *Hydrogen, Adsorption, *Semiconductors, Electrochemistry, Surface properties, Germanium, Crystals, Lattices

The method of rapid and slow polarization measurements showed that the over-voltage in hydrogen liberation by a p-type germanium cathode at potentials more negative than -0.6 v (the zero charge potential of germanium) diminished somewhat when the electrode is hydrogen saturated. The assumption is expressed that this phenomenon is associated with the bending of the energy bands on the semiconductor surface because of the adsorption and injection of hydrogen atoms into the crystal lattice. A sharp anomalous growth in the potential is observed in p- and n-type germanium cathodes at current densities above 10^{-1} amp/sq cm. Such a phenomenon is not observed on a degenerate semiconductor, which supports the hypothesis of an ohmic drop in potential in the impoverished layer on the germanium surface and in the bulk of the semiconductor. Electron diffusion from the depths of p-type germanium to its surface is not a process which limits the rate of electrochemical reaction in either hydrogen evolution or persulfate-ion reduction.

Esin, O. A. and Zyazev, V. L.
ELECTRICAL CONDUCTIVITY OF THE V_2O_5-PbO, V_2O_5-CaO AND V_2O_5-MgO SYSTEMS [Elektroprovodnost' Sistem V_2O_5-PbO, V_2O_5-CaO i V_2O_5-MgO]. [1960] 9p. 12 refs. MDF E-104.
Order from OTS $0.50 62-11550

Trans. of Zh[urnal] Neorg[anicheskoi] Khim[ii] (USSR) 1958, v. 3, no. 9, p. 2143-2149.

DESCRIPTORS: *Vanadium alloys, *Lead compounds, *Oxides, *Vanadium compounds, *Calcium compounds, *Magnesium compounds, Conductivity, *Electrical conductance, Slags, Alloys.

The electrical conductivity was measured of a number of alloys of the V_2O_5-PbO, V_2O_5-CaO and V_2O_5-MgO systems in a temperature range including the solid and liquid states. The character of the polytherms of $\varkappa$ obtained permits the assumption that MeO-V_2O_5 alloys containing up to 45% PbO, 20.9% CaO and 20.7% MgO remain semiconducting even in the liquid state. A further rise in the concentrations of these oxides leads to the production of melts with predominantly ionic conductivity. The form of the electrical conductivity isotherms and the curves for the activation energy indicates the existence in the melts of the systems of groups of atoms recalling the structure of the compounds $V_2O_5 \cdot 3PbO$, $V_2O_5 \cdot 8PbO$, $V_2O_5 \cdot CaO$ and $2V_2O_5 \cdot 3MgO$. The liquidus temperatures of alloys of different composition are estimated according to the jump in the electrical conductivity and are compared with existing results in the literature. (Author)

Fujitan, Yoshiyasu.
ADHESION OF MICROSCOPIC PARTICLES ON THE INCLINED GLASS SURFACE, III. [1961] 7p. (4 figs. omitted) 3 refs.
Order from SLA $1. 10 62-10753

Trans. of [Nihon Kagaku Zasshi] (Japan) 1952, v. 73, p. 578-580.

DESCRIPTORS: Glass, Surfaces, *Particles, *Adhesion, Aerosols.

Fujitani, Yoshiyasu.
SIZE OF PARTICLES FORMING THE SEDIMENTATION BOUNDARY SURFACE, II. [1961] 9p. (5 figs. 3 tables omitted) 2 refs.
Order from SLA $1. 10 62-10752

Trans. of [Nihon Kagaku Zasshi] (Japan) 1952, v. 73, p. 423-426.

DESCRIPTORS: *Aerosols, Particles, Sedimentation, *Smokes, *Ammonium radicals, *Chlorides, Aging, Distribution.

Kortuem, G.
THERMOCHROMISM, PIEZOCHROMISM, PHOTOCHROMISM, AND PHOTOMAGNETISM. [1961] 23p. (14 figs. omitted) 30 refs.
Order from SLA $2. 60 62-10595

Trans. of Ange[wandte] Chem[ie] (West Germany) 1958, v. 70 [no. 1] p. 14-[20].

DESCRIPTORS: *Anthrones, *Sterochemistry, Molecules, *Molecular structure, Chemical equilibrium, Thermodynamics, Molecular isomerism, Colors, Magnetism.

The above 4 phenomena, some of which have been known earlier, and some of which are of recent discovery, may be observed and clearly interpreted on the same molecule, such as dehydrodianthrone and its derivatives, with the aid of the measuring methods of modern physics. In the case of thermochromism and piezochromism we are dealing with a state of equilibrium governed either by temperature or pressure between two constitutionally isomeric types of molecules which, due to the exclusion of a coplanar structure are to be considered as alternate types of varying energy contents. A third photochromal type of molecule is created reversibly by photo-chemical excitation: It is paramagnetic and may be attributed to the occurrence of a double radical with uncoupled molecular halves with a mutual displacement of 90°. (Author)

Kravchenko, V. M.
THERMODYNAMIC CALCULATION OF QUATERNARY SYSTEMS: SYSTEM ORTHOXYLENE-METAXYLENE-PARAXYLENE-ETHYLBENZENE. [1962] 8p. 21 refs.
Order from OTS or SLA $1. 10 62-14614

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1941, v. 15, p. 652-658

DESCRIPTORS: *Xylenes, *Benzenes, *Ethyl radicals, *Thermodynamics, Thermochemistry, Solubility, *Eutectics, Crystallization, Phase studies, Chemical equilibrium.

The method previously suggested for solving several equations for isobars of solubility to determine the coordinates of eutectic points in ternary systems was extended to quaternary systems and as an example a diagram of the quaternary system orthoxylene-metaxylene-paraxylene-ethylbenzene was calculated and constructed. The geometrical character of the basic lines and planes is discussed designating the phase equilibria in the tetrahedron of the ideal quaternary system. The calculated quaternary system comprising the components of technical xylene can be used for analysis and separation of the latter. (Author)

Kupriyanov, S. E.
DISSOCIATION OF EXCITED IONS. [1962] 2p.
Order from ATS $4. 25 ATS-14P62R

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, no. 1, p. 218-219.

DESCRIPTORS: *Ions, *Dissociation, Excitation.

Lazorenko-Manevich, R. M. and Izidinov, S. O.
KINETICS OF CATHODIC PROCESSES ON SEMICONDUCTOR ELECTRODES DURING PARTICIPATION OF VALENCE BAND ELECTRONS. [1962]6p. 7 refs.
Order from OTS or SLA $1. 10 62-10635

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1961, v. 140, no. 1, p. 172-175.

DESCRIPTORS: *Semiconductors, *Electrodes, Electrons, Cathodes, *Electrochemistry, Reaction kinetics.

An analysis is presented of the manner in which valence-band electron participation in the cathodic process affects the form of the kinetic equations. The manner in which the valence band electron participation in the cathodic process affects the form of the kinetic equations is analyzed.

Lebedev, S. V., Koblyanskii, G. G., and Gulyaeva, A. I.
VAPOR PRESSURE OF SOLUTIONS OF 1, 3-BUTADIENE IN TURPENTINE AND TETRALIN. [1961] 3p. 5 refs.
Order from OTS or SLA $1. 10 61-18063

Trans. of mono. Lebedev, S. V., Life and Works, v. 1: Trudy Opytnogo Zavoda Lit. B., Leningrad, 1938, p. 667-671.

DESCRIPTORS: *Butadienes, Dienes, Solutions, Turpentine, Tetralin, *Vapor pressure.

Mirskii, Ya. V. and Mitrofanov, M. G.
PREPARATION OF MOLECULAR SIEVES FROM SYNTHETIC ZEOLITES IN THE FORM OF ABRASION-RESISTANT MICROSPHERICAL POWDERS. [1962] 4p.
Order from ATS $6.00 ATS-98P60R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141, no. 5, p. 1115-1157.

DESCRIPTORS: *Absorbents, *Organolites, *Powders, *Abrasives, Resistance, Microchemistry.

Oshe, A. I.
EFFECT OF SURFACE-ACTIVE SUBSTANCES ON THE DIFFUSION RATE OF ELECTROLYTIC HYDROGEN THROUGH IRON, tr. by Lydia Venters. Oct 61, 13p. 28 refs.
Order from OTS or SLA $1.60 AEC-tr-4856

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1958, v. 32, no. 7, p. 1622-1631.

DESCRIPTORS: Metals, *Iron, *Hydrogen, *Electrolytes, *Diffusion, Halides, Ions, Camphors, Naphthalenes, Sulfonic acids, Butyl radicals, Ammonium radicals, Detergents, Wetting agents, Chemical reactions.

The effect of halide anions and that of organic additions of different nature and opposite charges taken separately and in combination with halide anions simultaneously, on the hydrogen overvoltage and diffusion rate of the electrolytic hydrogen through the membranes of spectrally pure iron during cathode polarization in 1 N H_2SO_4, was investigated. In the presence of halide anions the diffusion rate goes through a maximum within a definite time, while the overvoltage increases, and the effect regularly increases in the series: Cl^-, Br^-, I^-, as well as with the growth of the concentration of the halides and acid. Camphor, anion of beta-naphthalene-sulfonic acid and cation of tetrabutyl ammonium in the absence of halide anions do not affect the diffusion rate and almost do not affect the hydrogen overvoltage. These additions introduced into solution together with the anions of halides, despite the difference in their charge sign and nature, act similarly, and namely-they intensify the effect of halide anions. Possibly there is a mechanism of action of halide anions and surface-active additions on the diffusion rate of the electrolytic hydrogen into iron.

Ovcharenko, F. D.
ELECTROKINETIC POTENTIAL OF CLAYS. [1962] 4p.
Order from ATS $5.25 ATS-17P61U

Trans. of Akad[emiya] Nauk [URSR]. Dopovidi, 1953, no. 5, p. 323-326.

DESCRIPTORS: *Electric potental, *Clays, Minerals.

Planovskaya, I. P. and Topchieva, K. V.
A STUDY OF THE KINETICS OF THE CONVERSION OF METHANOL TO FORMALDEHYDE ON A FLUIDIZED SILVER CATALYST. [1962] 12p.
Order from ATS $14.50 ATS-86P61R

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 3, p. 408-417.

DESCRIPTORS: *Reaction kinetics, *Methanols, *Formaldehyde, Silver catalysts, Catalysts.

Schmidt, Kurt.
DECAY AND MECHANISM OF GAS LUMINESCENCE USING EXCITATION BY FAST ELECTRONS (Abklingung und Mechanismus der Lumineszenz von Gasen bei Anregung durch Schnelle Elektronen). [1962] [29]p. (foreign text included) 19 refs.
Order from SLA $2.60 62-16024

Trans. of Z[eitschrift für] Naturforschung (West Germany) 1956, v. 11a [no. 12] p. 1023-1030.

DESCRIPTORS: *Gases, *Luminescence, Excitation, Electrons, *Electron bombardment, Pressure, Spectrographic analysis.

The mechanism of excitation and quenching is investigated for gases (N_2, O_2, H_2, CO_2, Ne, Xe, Ar/N_2, He/Ne, and mixtures of all gases with N_2) bombarded by fast electrons (50 kev) at high pressure (up to 700 torr). Measurements were made primarily of spectra and decay times. For most gases, such as H_2, O_2, CO_2, and Ne, one finds for the decay time as a function of pressure corresponding to quenching by collisions of the second kind: (p) $_0$/(1 p/p'), where $_0$ is the decay time of the unperturbed excited state. With some gases, such as N_2 and Xe, the relationship between decay time and pressure is not this simple. This is explained by the existence of preferred transitions in different pressure regions. (Author)

Seith, Wolfgang and Heumann, Theodor.
DIFFUSION OF METALS: EXCHANGE REACTIONS, ED. 2. No. 3 of series on Pure and Applied Metallography Presented in Separate Treatises. Jan 62, 284p. 613 refs.
Order from OTS $3.60 AEC-tr-4506

Trans. of mono. Diffusion in Metallen: Platzwechselreaktionen, Berlin/Göttingen/Heidelberg, 1955. Another trans. of chap. 2, p. 4-21 is available from LC or SLA mi$3.00, ph. $6.30 as AEC-tr-3768 [1959] [37]p.

DESCRIPTORS: *Metals, *Diffusion, *Exchange reactions, Mathematical analysis, Solids, Alloys, Phase studies.

Present knowledge is summarized under chapter headings entitled: (1) Definition of the diffusion coefficient and Fick's equations; (2) Methods of investigation; (3) Results of experimental determinations; (4) General laws and theories; (5) Concentration dependence of the diffusion coefficient; (6) Determination of diffusion coefficients in the case of volume variation; (7) Relation between the coefficients of self-diffusion and heterogeneous diffusion in binary solid solutions; (8) Partial diffusion coefficients; (9) Multiphase constitution diagram and the diffusion process; (10) Directional dependence of diffusion in the crystal lattice; (11) Surface diffusion and intergranular diffusion; (12) Propagation diffusion; (13) Influence of third alloy components; (14) The segregation theory; (15) Various exchange reaction phenomena; (16) Sintering; (17) Technical applications; (18) Transfer in alloys; (19) Diffusion in liquid alloys; and (20) Diffusion of gases in metals. Tables are appended for the evaluation of diffusion measurements.

Sinabell, J.
DETONATION VELOCITY AND DETONATION TRACES OF THIN EXPLOSIVE LAYERS. [1962] 18p.
Order from SLA $1.60 62-16161

Partial trans. [p. 121-124, 126-131] of Explosivestoffe (West Germany) 1961, no. 6, p. 121-133.

DESCRIPTORS: *Explosives, *Detonation, Detonation waves, Velocity, Aluminum compounds, Nitrates.

It was established that the experimental explosives A and B sensitized with certain inert compounds, detonated down to layer thicknesses of 3 to 2 mm., with detonation velocities of 5,800 m/sec and 6,400 m/sec respectively, which were unexpectedly high for such thin layers. The aluminum plates used as witnesses showed deep, very rough traces which corresponded in shape to the explosive which they supported. The behavior of Gelatin Donarit I was essentially different. The minimum thickness of the layer which detonated was 9 to 8 mm. The underlying aluminum plates show flameshaped imprints, indicating wave-like detonation processes. Neither the outline nor the depth of the imprints suggest a uniform propagation of the detonation. This type of trace is only observed when Gelatin Donarit I detonates at its low detonation velocity. Wave traces are produced both with flat layers and with cylindrical explosive columns. The powdered ammonium nitrate explosives detonate very readily. Donarit I, Donarit 2, and Pelonit D react down to layer thicknesses of 3 mm., Katamerit down to a thickness of 6 mm. The traces on the aluminum plates are quite different from those of Gelatin Donarit I, even when sensitized. The surface is slightly roughened and shows characteristic arcs which are grouped around the initiation point. (Author)

Thom, F.
A FLUID-LEVEL INDICATOR FOR LIQUIFIED GASES. 31 Jan 62, 4p. JPRS: 12243.
Order from OTS $0.50 62-11132

Trans. of Experimentelle Technik der Physik (East Germany) 1961, v. 9, no. 1, p. 43-45.

DESCRIPTORS: *Liquefied gases, *Cryostats, Liquid hydrogen, Gages, Oscillator circuits, Fluids, Instrumentation, Gases.

EARTH SCIENCES

Tokarev, P. I.
ENERGY EVALUATION OF THE FORCE OF THE BEZYMYANNYI VOLCANO EARTHQUAKES (KAMCHATKA). 28 Mar 62 [3]p. AID Rept. 62-35.
Order from OTS or SLA $1.10 62-24487

Abstract trans. of Akademiya Nauk SSSR. Kamchatskaya Vulkanologicheskaya [Stantsiya, Klyuchi]. Byulleten' Vulkanologicheskoi Stantsii [na Kamchatke] 1961, no. 31, p. 38-45.

DESCRIPTORS: *Volcanoes, *Earthquakes, Seismic waves, Propagation, Velocity, Damping, Energy.

An analysis was made of 50 Bezymyannyy earthquakes with maximum amplitudes of 1 to 465 μ for the years 1955-1956. The damping of their surface waves as recorded on seismograms of Kharin-type instruments conforms generally to the equation:

$$A_t = A_m e^{-\varepsilon(t - t_o)}$$

where A_t is the displacement amplitude at instant t, A_m is the maxium amplitude of the ground displacement of the surface wave at the village of Klyuchi, and t_o is the time of arrival of the surface wave. The mean damping coefficient for the same earthquakes was determined as $\Sigma_{mean} = 0.0204$ sec. The relative mean error of determination ε from 50 measurements was 6.5%; maximum relative error of any individual measurement was 15%.

Climatology and Meteorology

Bogdanova, N. P. and Lebedev, A. N.
THE RELATIONSHIP BETWEEN THE WEATHER AND CLIMATIC CHARACTERISTICS AND THE RADIATION TEMPERATURE OF THE UNDERLYING SURFACE (Svyaz' Pogodnykh i Klimaticheskikh Kharakteristik s Radiatsionnoi Temperaturnoi Podstilayushchei Poverkhnosti) tr. by Irene A. Donehoo. May 62, 18p. 1 ref.
Order from OTS $0.50 62-11706

Trans. of Glavanya Geofizicheskaye Observatoriya, Leningrad. Trudy (USSR) 1961, no. 109[171] p. 38-52.

DESCRIPTORS: Geophysics, *Thermal radiation, Measurement, *Meteorology, *Climatic factors, Collecting methods, Instrumentation, Aircraft, Temperature.

Measurements were carried out that made it possible to obtain radiation temperature values for 32 different types of underlying surfaces. A considerable portion of the air route traversed forests, especially mixed forests. The radiation temperature of the underlying surface is substantially dependent on its character. As a rule, the radiation temperature of the underlying surface is 8° to 10° higher than the temperature of the air at the flight level. It was possible to tie in accurately the abrupt temperature changes with the peculiarities of the underlying surface. The considerable decrease in temperature, 6° on the average, in the transition from land to water surface, and the decrease in the transition from desert to sea, which reached 20°, are particularly characteristic. The analysis of the data points out the extreme urgency to relate the radiational characteristics to weather and climatic characteristics. It is absolutely necessary to coordinate the radiation temperature with the character of the distribution of cloudiness, temperature of the air and soil, humidity of the air, and other meteorological elements.

Bradka, J. and Panenka, Ivan.
CZECHOSLOVAK STUDY OF JET STREAMS: STATISTICS ON HIGH-ALTITUDE WINDS IN PRAGUE [AND] INCIDENCE OF THE JET STREAM ABOVE CENTRAL EUROPE (Statiska Vyskoveho Vetru v Praze [and] Poznamka k Vyskytu Prudoveho Toku nad Strednou Evropou). 19 June 61 [23]p. JPRS: 9392.
Order from OTS or SLA $2.60 62-19180

Trans. of Meteorologicke Zpravy (Czechoslovakia) 1960, v. 13, no. 6, p. 153-156 and 159-160.

DESCRIPTORS: *Jet streams (Meteorology), Wind, Meteorological data, Meteorological charts, *Czechoslovakia, Europe.

This article offers statistics gathered between 1951and 1955 on the geostrophic wind in Prague. We interpolated the values of the wind direction from altitude map levels of 850, 700, 500, and 300 mb; the values of the wind velocity were interpolated only from the levels of 500 and 300 mb. Statistical data are appended on the dependence of the weather character on the direction of currents on the 850 mb level. (Bradka) The method of vertical sections along the line Emden-Munich helps to prove the incidence of jet stream, which, in a southwest synoptical situation above Central Europe, is correlated with the polar planetary altitude frontal zone. (Panenka)

Gaudin, L. S.
ALL-UNION METEOROLOGICAL CONFERENCE. 12 Mar 62 [8]p. JPRS: 12902.
Order from OTS or SLA $1.10 62-23385

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 11, p. 66-68.

DESCRIPTORS: *Meteorology, Conferences, Weather forecasting, Meteorological data, Computers.

Molga, M.
AGRICULTURAL METEOROLOGY. PT. II: OUTLINE OF AGROMETEOROLOGICAL PROBLEMS, trans. by M. Widymski and L. Widymski. 1962, 351p. 126 refs. PL 480 Agr.
Order from OTS $3.75 60-21419

Trans. of mono. Meteorologia Rolnicza, Warsaw, 1962, cz. II: Zarys Problematyki Agrometeorologii.

DESCRIPTORS: *Agriculture, *Meteorology, Air, Heat transfer, Humidity, Terrain, Soils, *Climate, Moisture, Hydrology, Evaporation, Plants, Evapotranspiration, Ecology, Trees, Growth, Climatic factors, Weather stations, Weather forecasting, *Poland.

Nepovitova, A. F.
FORMS OF UPPER SURFACES OF CLOUD LAYERS AND THEIR RELATION TO THE TEMPERATURE LAPSE RATE IN CLOUDS (Formy Verkhnei Poverkhnosti Oblachnykh Sloev i Ikh Sbyaz's Vertikal'nym Gradientom Temperatury v Oblakakh) tr. by H. K. Gold. June 62, 11p.
Order from OTS $0.50 62-11707

Trans. of Tsentral'naya Aerologicheskaya Observatoriya. Trudy (USSR) 1960, v. 28, p. 49-57.

DESCRIPTORS: *Clouds, Atmospheric sounding, Temperature, Humidity, Surfaces, Classifications.

The temperature lapse rate is closely connected with the degree of unevenness, that is, the more or less convective character of the upper surface of clouds. The development of unevenness and the lapse rate increase in parallel fashion. This dependence is most sharply pronounced with type A clouds under a layer of other clouds. With type B, sub-inversion cloudiness, it is weaker, but on the other hand more regular. With type C clouds, without an inversion, the lapse rate in their layer is smallest. Undulating and hilly clouds are encountered more often than slightly undulating and slightly hilly with the exception of cases in which clouds are located under a layer of other clouds. (Author)

Szigyarto, Zoltan.
THE CLIMATIC PROBABILITY FUNCTION. 7 Dec 61 [23]p. JPRS: 11460.
Order from OTS or SLA $2.60 62-19675

Partial trans. (some sections summarized) of Hidrologiai Kozlony (Hungary) 1961 [v. 41] no. 4, p. 284-288.

DESCRIPTORS: *Climate, *Precipitation, Probability.

Climatic probability functions have a remote relationship to mathematical-statistical probability concepts. They cannot be used for assigning probability values to different precipitation quantities. There are two function types: the precipitation maximum and the precipitation average functions. The precipitation maximum functions yield the approximate values of precipitation maxima pertaining to the corresponding time interval. The precipitation maximum functions can be unequivocably determined only if the "time elapsing from the beginning of the precipitation" or "any arbitrary time without special bounds" are selected as independent variables. In average functions the situation is similar with the addition that if the "arbitrary interval" is the basis of the process then, in the compilation of precipitation data, the equal time intervals yielding different precipitation quantities must not overlap. (Author)

Toporkov, L. G.
IS IT POSSIBLE TO ELIMINATE THE ICE COVER OF THE ARCTIC OCEAN. 19 Jan 62 [3]p. AID Rept. 62-8; AD-271 544.
Order from OTS or SLA $1.10 62-19116

Abstract trans. of Priroda (USSR) 1961 [v. 50] no. 11, p. 93-97.

DESCRIPTORS: *Climate, Arctic regions, Ocean currents, Ice, Melting, Climatic factors, Theory.

A dam across the Bearing Strait would prevent the influx of 30,000 km^3/yr of Pacific waters into the Arctic. Compensation for the resulting imbalance of 180,000 km^3/yr would require that the influx of water into the Arctic from the Atlantic be increased through the eastern side of the Greenland-Spitzbergen Strait. However, the amount of Atlantic waters flowing into the Arctic is determined more by atmospheric circulation than by the undertow forces ("podsos"), so that the amount flowing in would actually remain about the same. The compensation would be mainly in the form of cold, abyssal, and only partially Atlantic waters. Even if all the heat arriving at the surface in the region of water divergence were to flow south, it would not be sufficient to compensate for the deficit of heat caused by the cessation of the influx of Pacific waters, and the heat balance in the Arctic Ocean adjacent to the Bering Strait would not really improve. Furthermore, the thermal conditions west of the Strait, adjacent to Canada, will worsen, since a large proportion of the heat will accumulate in the area of water divergence. In a case when the exchange of waters between the Arctic and Atlantic Oceans is equal to the water outflow caused by atmospheric circulation, increased amounts of surface waters and ice would be carried out and an increased amount of heat carried through the deep. This eventually should lead to the clearance of ice from the Arctic Ocean and to the substitution of Arctic by Atlantic waters.

Vyal'tsev, V. V.
ARTIFICIAL CLOUD DISPERSION. 19 Jan 62, 3p.
AID Rept. 62-7; AD-271 541.
Order from OTS or SLA $1.10 62-19115

Abstract trans. of Priroda (USSR) 1961 [v. 50] no. 11, p. 79-83.

DESCRIPTORS: *Clouds, Reduction, Solar eclipse, *Visibility, Climatic factors, Aircraft, Flight paths, Carbon dioxide, Tests, Artificial precipitation.

On 15 February 1961, the Institute of Applied Geophysics, Academy of Sciences USSR, undertook the clearing of the skies over the Crimean Astrophysical Observatory and the nearby town of Dzhankoy in preparation for a total eclipse of the sun, whose umbra would pass over these points. Since the skies in the Crimea in February are usually overcast with as much as four or five layers of clouds with upper limits reaching 6000 to 7000 m, every effort was made to provide the best possible visibility. Heavy supercooled clouds driven by fast winds were dissipated by spraying carbon dioxide very rapidly into individual cloud banks. The total seeding area was divided into unit areas roughly in the form of quadrangles, and each quadrangle was seeded in parallel lines with and against the wind. Seeding was started at a dosage of 3 km/min at 0820 hours against the wind in parallel lines at intervals of 3 km. The upper limit of the clouds was 1200 m and the prevailing temperature, -5° C. As soon as the first 20 x 20 km quadrangle was seeded, the strips began to merge and combined into one general cleared area. By the time seeding of the second quadrangle began at 0930 hours, the first quadrangle was completely cleared. By 1000 hours, the beginning of the eclipse, both quadrangles had combined into one cleared opening, through which the sun shone on the Observatory.

Geodesy

ANNUAL REPT. OF SURVEY OF ISRAEL, 1958-59
LABOR OFFICE, DEPT. OF SURVEY (Din Veheshbon Shnati, 1958-59, Misrad Havoda, Mahleket Hamdidot) tr. by Maurice Ruderman and Ben Blum. [1960] [29]p. (illus. omitted). H-6103.
Order from OTS or SLA $2.60 60-19906

Trans. of mono. Din Veheshbon Shnati 1958-59, Tel-Aviv, July 59, p. 1-16 and legends of maps.

DESCRIPTORS: *Aerial photography, *Mapping, *Maps, Personnel, Training, Statistical analysis, Geodesics, *Israel.

Bezzegh, Laszlo.
THE Ta-D1 STADIA-ARC TACHYMETER OF THE HUNGARIAN OPTICAL WORKS. 4 Jan 62 [13]p.
JPRS: 11819.
Order from OTS or SLA $1.60 62-19667

Trans. of Geodezia es Kartografia (Hungary) 1961, v. 13, no. 2, p. 112-115.

DESCRIPTORS: *Geodesics, Instrumentation, *Stadiometers, Design, Tests, Hungary.

Böhm, J.
THE ESTIMATE OF THE ERROR INTERVAL IN GEODESY. 27 Oct 61 [13]p. JPRS: 10729.
Order from OTS or SLA $1.60 62-24551

Trans. of Vermessungstechnik (East Germany) 1961, v. 9, no. 4, p. 119-122.

DESCRIPTORS: *Geodesics, Geodetic data, Geophysical prospecting, Errors.

Izotov, A. A.
INVESTIGATIONS OF SOVIET GEODESISTS ON THE DETERMINATION OF THE SIZE AND SHAPE OF THE EARTH. [1961] [7]p. [ACIC] LD-44.
Order from OTS or SLA $1.10 62-15969

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1952, no. 3, p. 52-54.

DESCRIPTORS: *Geodesics, *Earth, Mapping, Ellipsoids, Configuration.

Geology

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 47, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 2p.
Order from OTS or SLA $1.10 62-10784

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 47, no. 1, p. 28-30 and 43-48.

DESCRIPTORS: *Geophysical prospecting, Rock, Thermal conductivity, *Manganese, Ores, Deposits, *Iron, *Nickel, *Cobalt, Abstracting

Contents:
Thermal method of prospecting vs. gravitational and electrical methods, by S. S. Kovner and B. L. Shneerson
A new manganiferous provine in the south Urals, by A. G. Betekhtin
Type of complex deposits of iron, nickel and cobalt ores in the Urals. by B. P. Krotov

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 49, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 2p.
Order from OTS or SLA $1.10 62-10793

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1945, v. 49, no. 1, p. 43-49.

DESCRIPTORS: *Rock, Porosity, *Copper, Siberia, Abstracting.

Contents:
Frequency distribution of porosity of coefficients and epigenetic processes in spiriferous layers in the oil-bearing region of Buguruslan, by A. B. Vistelyus
Native copper in the lava field of the Siberian platform, by G. Moor.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 49, NO. 3: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 4p. 2 refs.
Order from OTS or SLA $1.10 · 62-10795

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1945, v. 49, no. 3, p. 198-201 and 204-214.

DESCRIPTORS: *Polymers, Mechanical properties, *Geology, Hydrology, Petroleum, Sources, Stability, Abstracting.

Contents:
Influence of volume sorption on the mechanical properties of polymers, by S. N. Zhurkov
Certain questions involved in the geology of the upper permian deposits of the middle part of the Near-Kama Region, by Vitaly Pereder'ev
Tectonic structure of the UFA Plateau according to the latest data, by N. G. Chochya
Hydrogeological conditions of stability of gas and oil fields of the Volga Region, by A. B. Ronov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 49, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 3p. 4 refs.
Order from OTS or SLA $1.10 62-10791

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1945, v. 48, no. 7, p. 491-493 and 496-501.

DESCRIPTORS: Abstracting, *Natural gas, Deposits, *Minerals, Lakes, *Tungsten, *Molybdenum, Geology, Carbonates, Sulfates.

Contents:
Natural gases of bottom deposits of mineral lakes, by A. I. Dzens-Litovskii
A new region of tungsten and molybdenum mineralization in northeastern Kazakhstan, by P. N. Kropotkin
Geology of the leaching processes in the lower permian carbonate-sulfate series of the Chistopol ' uplifts, by A. B. Ronov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 49, NO. 7: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 2p.
Order from OTS or SLA $1.10 62-10797

Abstracts trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1945, v. 49, no. 7, p. 508-513.

DESCRIPTORS: *Bituminous surfacing, Asphalt, Hardness, Temperature, Dolomite, Calcium compounds, Oxides, *Additives, *Geological survey, Petroleum, Geophysical prospecting, *Gases, *Oils.

Contents:
Influence of the components on the softening temperature of bituminous materials, by A. V. Solov'ev
Principal structural elements and possible oil and gas resources on the southern border of the European part of the U. S. S. R., by I. O. Brod.

Brodovoi, V. V. and Morozov, M. D.
THE STATUS OF GEOPHYSICAL RESEARCH IN KAZAKHSTAN. 11 June 62 [19]p. JPRS: 14139.
Order from OTS or SLA $1.60 62-25184

Trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata]. Izvestiya. Seriya Geologicheskaya, 1960 [v. 32] no. 4, p. 37-52.

DESCRIPTORS: *Geophysics, *Geophysical prospecting, Geology, Mapping.

Bulashevich, Yu. P.
THE THEORY OF NEUTRON LOGGING (K Teorii Neitronnogo Karottazha). [1962] [16]p. (foreign text included) 3 refs.
Order from OTS or SLA $1.60 62-14600

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1951, no. 3, p. 31-36.

DESCRIPTORS: *Well logging, Thermal neutrons, Fast neutrons, Boreholes, Theory, Geology

The author gives the solution for the equation of diffusion of thermal neutrons when taking into account the slowing down of the fast neutrons of the source. Curves are drawn for the distribution of neutron density around the sources for a series of ricks characteristic of oil deposits. Considers the problem of reversion of neutron diagrams in connection with the change of the length of the sonde. (Author)

Mineralogy

SOVIET CLASSIFICATION OF URANIUM-BEARING MINERALS. 7 Mar 60 [20]p. 8 refs. AF 1419504.
Order from OTS or SLA $1.60 61-28364

DESCRIPTORS: *Uranium, Minerals, *Ores, Classification.

Kotovich, V. A. and Frank-Kamenetskii, V. A.
STANDARD X-RAY PHOTOGRAPHS OF CERTAIN SELENIDES, TELLURIDES, ARSENIDES AND SULFIDES OF COPPER, ZINC, CADMIUM, GALLIUM AND INDIUM. [1962] 5p. 4 refs.
Order from OTS or SLA $1.10 62-10534

Trans. of Russian language article from an unidentified source, n.d.

DESCRIPTORS: *Crystal structure, *X-ray photography, *Minerals, Selenides, Tellurides, Arsenides, Sulfides, Copper, Zinc, Cadmium, Gallium, Indium.

An X-ray study by means of the powder method was done of isomorphic forms of synthetic selenides, tellurides, arsenides, and sulfides of copper, silver, zinc, cadium, gallium, and indium. The type of lattice, its parameters, and indications of the interplanar distances were found in those cases when the specimen gave a simple, sufficiently highly symmetric lattice system. In more complex cases only the interplanar distances were determined.

Physics of the Atmosphere

NATURE, 1961 [VOL. 50] NO. 10: SELECTED ARTICLES. 1 Mar 62 [58]p. 4 refs. FTD-TT-61-217.
Order from OTS or SLA $5.60 62-24949

Unedited rough draft trans. of Priroda (USSR) 1961 [v. 50] no. 10, p. 23-37 and 82-87.
##Another trans. of p. 23-31 is available from OTS or SLA $1.60 as 62-14557 [1962] [14]p.; abstract trans. available from OTS or SLA $1.10 as 62-25156, AID-62-50, 19 Apr 62, 5p.

DESCRIPTORS: *Upper atmosphere, Atmosphere, Exploration, Rocket research, Satellite vehicle research, *Space flight, *Physiology, Space medicine, Telemeter systems, *Magnetohydrodynamics, *Generators, Electric power production, Plasma physics.

Contents:
##Rockets, satellites and the exploration of the upper atmosphere, by B. A. Mirtov
Human physiology and outer space, by V. V. Parin
Magnetohydrodynamic generators, by A. E. Sheindlin.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. 14. 30 June 61 [39]p. 20 refs. AID rept. 61-95; AD-260 431.
Order from OTS or SLA $3.60 61-27304

DESCRIPTORS: *Upper atmosphere, Ionosphere, Solar energy, Van Allen radiation belt, Cosmic rays, Terrestrial magnetism, Atmospheric electricity, Literature, Electrons, Density, Satellite vehicles.

Contents:
Ionospheric electron concentration
Solar radiation and the ionosphere
Van Allen belts and cosmic rays
Telluric currents
Atmospheric electricity
Satellite and missile data.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. 15. 31 July 61 [37]p. 18 refs. AID rept. 61-110; AD-261 453.
Order from OTS or SLA $3.60 61-27741

DESCRIPTORS: *Astrophysics, *Geophysics, *Bibliography, Upper atmosphere, Ionosphere, Solar atmosphere, Atmospheric electricity, Terrestrial magnetism, Magnetic storms, Literature.

Contents:
Solar radiation and the ionosphere
Telluric currents
Atmospheric electricity.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. no. 16 on AID Work Assignment no. 3. 31 Aug 61 [20]p. 13 refs. AID rept. 61-121: AD-263 668
Order from OTS or SLA $1.60 61-28483

DESCRIPTORS: *Upper atmosphere, Ionosphere, Solar energy, Atmospheric electricity, *Bibliography, Astrophysics, Geophysics.

Contents:
Solar radiation and the ionosphere
Atmospheric electricity.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. no. 17 on AID Work Assignment no. 3. 30 Sep 61 [33]p. 18 refs. AID rept. 61-137. AD-265 439.
Order from OTS or SLA $3.60 61-28795

DESCRIPTORS: *Upper atmosphere, Ionosphere, Solar energy, Van Allen radiation belt, Cosmic rays, Terrestrial magnetism, Meteorology, *Bibliography.

Contents:
Solar radiation and the ionosphere
Van Allen belts and cosmic rays
Telluric currents
Meteorology of the upper atmosphere.

ENGINEERING

Epshtein, E. F., Arch, E. I., and Vitort, G. K.
NEW METHODS IN CRUSHING OF ROCKS.
19 June 62 [135]p. 84 refs. FTD-TT-62-122.
Order from OTS $2.75 62-11712

Unedited rough draft trans. of mono. Novye Metody Razrusheniya Gornykh Porod, Moscow, 1960, 87p.

DESCRIPTORS: *Rock, Coal, Ores, Deposits, Electric machinery, *Ball mills, Drills, Drilling machines, Machine tools, Cutting tools, Grinders, *Mining engineering, Electric currents, High frequency, Ultrasonics, Hydraulic systems, Thermite, Technological intelligence, Electric discharges, Water, Shock waves.

This brochure is devoted to new methods of crushing rocks for sinking drillholes, for secondary grinding, and for the development of coal and ore deposits. The brochure describes in detail percussion-rotary drilling with loaded hydraulic drills, the crushing of rocks by means of electrohydraulic installations and high-frequency currents. The results of industrial and laboratory tests of various installations are presented. The brochure is intended for engineer-technical and scientific workers within the petroleum, coal, mining, and construction industries. (Soviet publisher's note)

Kronmüller, H.
CONVERTERS. Mar 62.
Order from BISI £4 BISI-2678

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1961 [v. 103] 11 Oct, p. 1429-1433.

DESCRIPTORS: Measurement, *Electromechanical converters, Transmission, Feedback.

Meder, Horst.
TESTS WITH WATER STEMMING BAGS IN COAL MINING AT THE HAUSHAM MINE. [1962] 22p.
Order from SLA $2.60 62-16160

Trans. of Explosifs (Belgium) 1961 [v. 14] no. 2, p. 36-47 (originally pub. Glückauf (West Germany) 1961 [v. 97] no. 3, p. 143-147).

DESCRIPTORS: *Coal, *Mines, *Mining engineering, Engineering, Blast, Boreholes, Tests.

Chemical Engineering

PROCESS FOR POLYMERIZING OR COPOLYMERIZING VINYL AND VINYLIDENE HALIDES IN AN AQUEOUS MEDIUM WITHOUT EMULSIFIERS OR DISPERSION AGENTS. [1961] 7p.
Order from RIS $17.00 RIS rept. 61076

Trans. of German patent application C 15 325 (39c, 25/01) DAS 1 065 612, by Chemische Werke Huels A.G., filed 13 Aug 57, pub. 17 Sep 59.

DESCRIPTORS: *Elastomers, *Polymerization, *Vinyl radicals, *Halogen compounds, Peroxides, Catalysts.

PROCESS FOR PRODUCING HIGH-MOLECULAR POLYMERS OF ACETYLENE HYDROCARBONS. [1961] 12p.
Order from RIS $28.50 RIS rept. 61107

Trans. of German patent application M 29 976 (39 c, 25/01) DAS 1 052 689, by Montecatini, Soc. Gen. per l'Industria Mineraria e Chimica, Milan [Italy] filed 15 Mar 56, pub. 12 Mar 59, pat. pub. 10 Sep 59.

DESCRIPTORS: *Polymers, *Acetylenes, *Hydrocarbons, Alkyl radicals, Titanium compounds, Halides, Organic solvents.

PROCESS FOR PRODUCING NITRIC ACID. [1961] 5p.
Order from RIS $8.25 RIS rept. 97140

Trans. of German patent application D 51 291 (12i, 28) DAS 1 073 455, by Société Belge de l'Azote et des Produits Chimiques du Marly, S.A., Liége (Belgium) filed 17 Nov 56, pub. 21 Jan 60 (priority: Belgium, 23 Nov 55, no. 543 041).

DESCRIPTORS: *Nitric acid, Production, *Ammonia, Combustion, Oxidation, Absorption.

Aerov, M. E., Gorechenkov, V. G. and others.
EFFICIENCY AND LOAD LIMITS OF INDUSTRIAL ABSORBERS WITH BUBBLE TRAYS OF VARIOUS DESIGNS. [1962] 6p.
Order from ATS $8.00 ATS-65P59R

Trans. of Gazovaya Prom[yshlennost'] (USSR) 1961, v. 6, no. 11, p. 35-38.

DESCRIPTORS: *Absorbants, Bubbles, *Industrial research.

Yamauchi, S.
STUDY OF THE PRODUCTION OF FORMALDEHYDE FROM METHANOL. IV. STUDIES OF CATALYSTS FOR THE MANUFACTURE OF FORMALDEHYDE. [1962] 16p.
Order from ATS $19.75 ATS-00P62J

Trans. of Yuki Gosei Kagaku Kyokai Shi (Japan) 1960, v. 18, no. 12, p. 888-894.

DESCRIPTORS: *Formaldehyde, Production, Methanols, Chemical reactions, Synthesis, Catalysts.

See also ATS-32N50J

Civil Engineering

Berezinskii, A. R., Sokolova, V. F., and Alipov, V. V.
THE UTILIZATION OF PRECAST REINFORCED CONCRETE IN HYDROTECHNICAL STRUCTURES. 10 May 62, 234p. (38 figs. omitted) 299 refs. I-1056; JPRS(R-2258-D).
Order from OTS $3.50 62-11688

Trans. of mono. Primenenie Sbornogo Zhelezobetona v Gidrotekhnicheskikh Sooruzheniyakh, Leningrad/Moscow, 1959, 431p.

DESCRIPTORS: *Reinforced concrete, Structures, Construction, *Hydroelectric power systems, *Dams, *Hydrology, *Transportation, Inland waterways, Mooring, Elevators, Bridges, Drainage, Water tunnels.

The present work is a survey of domestic (Soviet) and foreign experience in the utilization of precast reinforced concrete in hydraulic structures. The book dwells on types and schemes of precast units utilized in the basic branches of hydrotechnical construction: hydroelectric power, land improvement and water transportation. This book is designed for workers of design, construction and scientific research organizations and may also be used by students of higher technical educational institutions. (Soviet publisher's note)

Eiler, Z.
GRAPHIC METHOD FOR THE DETERMINATION OF STRESSES IN SOIL (Graficka Metoda za Odredivanje Napona u Zemljistu) tr. by Vlasta Petyo. 1962, 23p. 1 ref. PL-480 Agr.
Order from OTS $0.50 60-21703

Trans. of Nase Gradevinarstvo (Yugoslavia) 1955, no. 5, p. 671-674.

DESCRIPTORS: *Soils, *Stresses, Shales, Dolomite, Load distribution, Rock, *Dams, Internal friction, Transformations (Mathematics), Numerical analysis

Filippi, Jean.
PETROLEUM TAR IN THE CONSTRUCTION OF ROADS. [1962] 5p.
Order from SLA $1.10 62-14019

Trans. of mono. (speech of Mr. Laurent) from French Association of Petrol Technician's Conference, 4 Feb 48.

DESCRIPTORS: Petroleum, Coal tar, Construction, *Roads, *Bituminous coatings, *Pavements.

Sedov, M. P.
PROTECTIVE REINFORCED CONCRETE SHELLS IN HYDROTECHNIC CONSTRUCTIONS, tr. by M. Caspary. 1962, 71p. 28 refs. PL-480 Int.
Order from OTS $0.75 61-31064

Trans. of mono. Zashchitnye Zhelezobetonnye Obolochki v Gidrotekhnicheskom Stroitel'stve, Moscow/Leningrad, 1958, [96]p.

DESCRIPTORS: *Reinforced concrete, *Structural shells, Concrete, Construction, Structures, Storage, Design, Construction materials industry, Hydroelectric power systems.

This book summarizes experience in the erection of hydrotechnic structures with applied protective shells. Technological problems in the manufacture of precast units for protective shells in specialized plants are dealt with in detail. Storage, design, and erection problems are elaborated, and the quality requirements for protective shell units and their erection are discussed. Comparative data from experience in the use of protective shells in the USSR and elsewhere are followed by conclusions and recommendations. The field of application of various structural types of precast units for protective shells is outlined, as is the standardization of their dimensions. The book is intended for qualified workers and junior technical staff in the field of hydrotechnic reinforced concrete structures; it may also be used by engineering students. (Soviet publisher's note)

Electrical and Electronic Engineering

AUTOMATIC CONTROL THEORY. 7 May 62 [96]p. 35 refs. JPRS: 13671.
Order from OTS or SLA $8.60 62-24392

Trans. of Avtomatyka (USSR) 1961, no. 6, p. 3-8, 10-13, 15-24, 26-50, 52-59, 61-68, 70-75.

DESCRIPTORS: *Automatic, Control, Theory, Non-linear systems, *Control systems, Stability, Quality control, Transients, Frequency, Dynamics, Monitors, Circuits, Feedback, Synthesis, Errors, Non-linear differential equations, Solutions.

Contents:
On a sufficient criterion of stability on non-linear linked-control systems, by A. K. Bedel'baev
On the question of the invariance of the output coordinate of a non-linear control object with unstable parameters, by O. M. Kostyur

Investigation of a non-linear Asiatic auto-control systems, by I. I. Krynets'kyi and others
Analysis of the dynamic properties of one class of automatic-control systems, by V. S. Lerner
Investigation of the criticality of adjustments of two-circuit monitoring systems and of monitoring systems with non-single feedback, by V. S. Nedavnii
Finding approximate solutions of nonlinear differential equations describing transient processes in automatic-control systems, by V. V. Pavlov
Some qualitative peculiarities of nonlinear circuits with a nonlinear element having a piecewise-linear characteristic, by L. A. Sinits'kyi and Yu. M. Shumkov
The theory of invariance and the minimum mean quadratic error for atuomatic-control systems, by A. G. Shevelev.

A CIRCUIT ARRANGEMENT FOR SYNCHRONIZING AN OSCILLATOR WITH A CONTROL OSCILLATION (Montage pour Synchroniser un Oscillateur sur une Oscillation de Commande) tr. by A. Pingell. 25 May 62, 10p. N R L Trans. no. 889.
Order from OTS $0.50 62-11696

Trans. of French patent 1,201,550, by N. V. Philips' Gloeilampenfabrieken (Netherlands) appl. 23 Apr 58, granted 15 July 59, pub. 30 Dec 59 [appl. filed in Netherlands 25 Apr 57).

DESCRIPTORS: *Circuits, Oscillation, *Oscillator circuits, Radiofrequency filters, *Television receivers, *Synchronizers

The invention concerns a circuit arrangement for synchronizing an oscillator with a control oscillation, in which both an oscillation furnished by the oscillator and an oscillation derived from the control oscillation are applied to a comparator stage, wherein the output circuit contains a filtering network, whose output voltage regulates the frequency of the oscillator. The circuit is characterized primarily by the fact that the two oscillations or the oscillations derived from them, are at the same time applied to a coincidence medium, which controls a valve. By means of this valve, a regulation signal, drawn at the input of said network or from a tap of this network, is applied to the oscillator; the valve is open only in the absence of coincidences of said oscillations. This circuit may also present a peculiarity in that between the coincidence part and the valve, there is inserted a filter whose time constant is notably larger than an oscillation period of the oscillator, so that during the regulation of the oscillator, the valve closes progressively.

THEORY AND APPLICATION OF DISCRETE AUTOMATIC SYSTEMS. 16 Apr 62 [1011]p. 267 refs. MCL-1253; AD-274 926.
Order from OTS or SLA $38.50 62-24412

Trans. of mono. Teoriya i Primenenie Diskretnykh Avtomaticheskikh Sistem (Trudy Konferentsii, Moscow, 22-26 Sep 58) Moscow, 1960, 572p. ##Another trans of p. 132-150 is available from OTS or SLA $2.60 as 62-10155 [1961] [27]p.

DESCRIPTORS: *Automatic, *Control systems, Theory, *Automation, *Digital systems, Analog-to-digital converters, Digital computers, *Nonlinear systems, Linear systems, Simulation, *Servo systems, Pulse modulation.

Contents:
Discrete automatic systems, problems of theory, and prospects of development, by, Ya. Z. Tsypkin
On the synthesis of regulating part of optimum systems for certain objects with delay, by A. G. Butkovskii and S. M. Domanitskii
Optimum regulation of a system of second order with delay, by O. G. Varshavskii
Concerning limiting dynamic indices of standard objects controlled by an astatic acting mechanism with limited speed and path of the regulating organ, by G. A. Nadzhafova
On the selection of the optimal parameters of a regulator during discreet adjustment of the servomotor, by Yu. G. Kornilov
Elements of the theory of linear pulse systems with variable parameters, by G. P. Tartakovskii
Some questions on the analysis and synthesis of pulse systems with variable parameters which change abruptly, by F. M. Kilin
Synthesis of self-adjusting systems of automatic control with direct control elements, by A. A. Krasovskii
On pulse systems, incorporating pulse elements with various repetition periods, by Fan' Chun-Vuy
##Auto-oscillation in pulse-width modulation systems, by I. V. Pyshkin
On pulse and continuous systems with extrapolating devices, by E. M. Esipovich
Compensating the effect of delay in pulse automatic systems, by Ya. Z. Tsypkin
The application of a frequency method for designing linear pulse control systems, by E. A. Krogyus
The design of discrete filters, by A. I. Pokrovskii
The application of self-adjusting programs for the control of cyclically repeating processes, by I. I. Perel'man
Simulation of pulse-type automatic control systems, by M. A. Shnaidman
A correcting device for control of technological facilities, by E. L. Itskovich
A discontinuous controller with a dependent operating interval, by Ya. E. Gel'fand
A system for multi-point control of technological parameters with the application of electron-beam indicator, by I. O. Oskolov
Discrete three-position regulation of twenty parameters with one controller, by V. M. Eigenbrot
Methods for improving the quick action of an amplidyne and the calculation of the transients in complex pulse circuits, by V. A. Oleinikov
Possibility of using digital devices for automatic control of power system operation on the basis of frequency and active power, by A. G. Moskalev
Application of elements of digital techniques in automatic control systems for multi-cable shaft elevator installations, by O. M. Kryzhanovskii and M. Yu. Beiderman
Prospects for application of electronic control machines to automation of radio receiving centers, by S. M. Khlytchiev and G. A. Aleksandrov
Digital control machine for a blooming mill, by Z. B. Vartanov

A complex digital-analog unit for process investigation in control systems employing digital control machines, by B. M. Kagan and others
Comparative investigation and development of elements of position, integral and velocity control systems in digital program control, by B. A. Sigov
High-speed electric vacuum instruments converting continuous data to discrete and vice versa for wideband communications systems using pulse code modulation, by Yu. I. Kaznacheev and others
Several types of digital functional converters, by B. L. Ermilov
The classification of analog-to-digital converters, by A. K. Zavolokin
Proposals for the classification of analog-to-digital converters, by E. I. Gimis
Data unit of the angle of defection A multiple rotation shaft, by I. I. Mikhailov
Digital computers for program control, by V. A. Brik
On a machine for calculating linear combinations of functions, based on methods excluding multiplication, by G. G. Men'shikov
A large capacity general purpose computer for analysis of relay circuits, by P. P. Parkhomenko
On certain transformations of finite automata, by Yu. Ya. Bazilevskii
Solution of time logical equations by the reduction method, by Yu. Ya. Bazilevskii
Investigation of nonlinear processes in an optimalizing controller, by V. V. Kazakevich
On precise determination of self-oscillating conditions in optimalizing relay control systems, by Yu. V. Dolgolenko'
Steady-state calculation in optimalizing control systems with independent scanning, by I. S. Morosanov
Investigation of step-type optimalizing control systems with pulse elements and with digital elements, by V. M. Kuntsevich
Some problems in the theory of peak-holding optimalizers, by Yu. I. Ostrovskii
Influence of random factors on automatic scanning, by A. A. Fel'dbaum
On design principles and methods of analysis for certain types of optimalizing systems, by L. N. Fitsner
Comparison of certain methods of searching for an automatic optimizer, by R. I. Stakhouskii
About one principle of extremum regulation, by Yu. K. Krug
An automatic single-action minimizer in discrete automatic-optimalization systems, by O. V. Kirillov
Extreme systems of turbine drilling with discrete devices, by M. G. Eskin
Electronic extreme regulator, by V. V. Kazakevich

Butusov, V.
MACHINE TOOLS WITH PROGRAM CONTROL [SELECTED CHAPTERS]. 1 May 62 [68]p. JPRS: 13631.
Order from OTS or SLA $6.60 62-24382

Trans. of mono. Stanki s Programnym Upravleniem, Moscow, 1960, p. 32-73.

DESCRIPTORS: *Machine tools, Computers, Digital computers, *Programming, Memory devices, *Control systems, Cybernetics, *Electronic circuits, Trigger circuits, Electronic equipment.

Dosse, J.
THEORETICAL AND EXPERIMENTAL EXAMINATION OF ELECTRON GUNS. [1962] 36p. (22 formulae 18 figs. omitted) 32 refs.
Order from SLA $3.60 62-16205

Trans. of Zeitschrift für Physik (Germany) 1940, v. 115, p. 530-556.

DESCRIPTORS: *Electron guns, Electron beams, Geometry, Electrodes, Theory, Experimental data.

Drabkin, A. L.
MULTIDIPOLE ANTENNA OF ROTATING POLARIZATION. [1959] 5p. MDF D-132.
Order from OTS $0.50 62-11180

Trans. of #Radiotekh[nika] (USSR) 1959, v. 14, no. 8, p. 3-7.

DESCRIPTORS: *Dipole antennas, Design, Polarization

A new, slightly-directed antenna of rotating polarization, proposed by the author, is described. The antenna consists of horizontal and vertical dipoles with currents in definite phase relations. The antenna field intensity has a rotating polarization which is almost circular in all directions in the space. The directivity pattern in any plane passing through the antenna axis is a cardiod, which guarantees the surveyal of approximately a hemisphere of the space. (Author)

Druzhinin, G. V.
CONDENSER STANDBYS. [1960] 7p. 5 refs. MDF D-133.
Order from OTS $0.50 62-11181

Trans. of #Radiotekh[nika] i Elektr[onika] (USSR) 1959, v. 4, no. 3, p. 463-467.

DESCRIPTORS: *Electronic circuits, Maintenance, *Capacitors, Reliability, Circuits.

A method is considered for increasing the reliability of condensers by using the minimum standby (excess) capacity. (Author)

Druzhinin, G. V.
ON FAILURES OF AUTOMATIC SYSTEMS WITH AGING AND WEAR OF THE ELEMENTS. [1960] 11p. 9 refs. MDF D-146.
Order from OTS $0.50 62-11189

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Energ[etika] i Avto[matika] 1960, no. 4, p. 189-194.

DESCRIPTORS: *Electronic systems, Failure, *Electronic equipment, Deterioration, Automatic

The computation of the safety of real systems is considered by taking account of the various boundaries of the different elements of the system.

Evtyanov, S. I.
BUILD-UP OF THE FREQUENCY OF SELF OSCILLATION. [1960] 12p. 6 refs. MDF E-107
Order from OTS $0.50 62-11257

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Radiotekh[nika] i Elekt[ronika] (USSR) 1959, no. 1, p. 105-116.

DESCRIPTORS: *Oscillator circuits, Mathematical analysis, Frequency, Circuits, Oscillations.

For four single-loop self-oscillators circuits, a general, contracted symbolic equation is composed, taking into account second-order terms in the circuit damping (δ). From this equation, a frequency correction is obtained in the process of the self-oscillation build-up. In order to approximate the plate current characteristic with a cubic polynomial, graphs of non-isochronicity are constructed, i.e., the dependence of the frequency on the amplitude of self-oscillation in the transient region. (Author)

Heywang, H. and Preissinger, H.
COUNTING OF SELF-HEALING PUNCTURES IN METALLIZED PAPER CAPACITORS UNDER DC VOLTAGE. [1962] 19p. 9 refs.
Order from SLA $1.60 62-14787

Trans. of Siemens Zeitschrift (West Germany) 1961, v. 35, no. 6, p. 493-499.

DESCRIPTORS: *Paper capacitors, Metal coatings, Pulse counters, Direct current, Voltage, Life expectancy.

Horst, Rochow.
CERAMIC CONDENSER DIELECTRIC WITH HIGH DIELECTRIC CONSTANT AND LOW TEMPERATURE DEPENDENCE. [1962] 7p. (2 figs. omitted) 5 refs.
Order from OTS or SLA $1.10 62-14894

Trans. of German patent 1,117,766 by Rosenthal-Isolatoren Gesellschaft, appl. 21 Feb 59, issued 23 Nov 61.

DESCRIPTORS: *Ceramic capacitors, *Dielectrics, Dielectric properties, Temperature, Capacitors.

Kawazu, S., Sugahara, A., and Ishii, H.
TRANSMISSION CHARACTERISTICS AND DESIGN METHOD OF BRANCHING FILTER FOR MICROWAVE RADIO RELAY SYSTEM. [1962] 25p. 15 refs.
Order from SLA $2.60 62-16603

Trans. of [Denki Tsushin Gakkai Zasshi] (Japan) 1961, v. 44, no. 8, p. 1207-1216.

DESCRIPTORS: *Microwave relay systems, *Radio relay systems, Broadband, Frequency modulation, Microwaves, Electric filters, *Waveguide filters, Design, Wave transmission.

The transmission characteristics of a microwave branching filter, of a form combining a hybrid circuit with a 2-set filter system, are described in detail. The effects of slight differences in these characteristics (delay period, transmission loss, amount of coupling decrement, impedance frequency of length of coupling wire, and 2-set filter system) are explained. A design method is established to improve the transmission characteristics of a branching filter for broad-band radio relay. As a concrete example of this design, the authors put to practical use a branching filter based on a "magic T" and a 2-set square wave-guide filter, as well as a broad-band radio relay branching filter which combined a filter system crossing inside a round wave-guide and a round hybrid, both in a smaller and improved form. The design was adapted to that purpose and it was thus proved that the theory shown in the present article is really applicable in practice. (Author)

Leilich, K. and Ditgens, K.
THE BEHAVIOR OF WIRES WITH SYNTHETIC INSULATION (PVC) FOR DIRECT CURRENT VOLTAGES. Report presented at the VDE Convention, Karlsruhe, 13-16 Sep 59. [1962] 17p.
Order from SLA $1.60 62-16585

Trans. of Elektrizitätswirtschaft (West Germany) 1949, v. 48, no. 11, p. 264-267.

DESCRIPTORS: Vinyl chlorides, Polymers, Insulating materials, *Electric insulation, *Electric wire, Direct current, Voltage, Wire.

Manukhyan, R. S. and Paverman, S. V.
ON THE EMPLOYMENT OF A COMPUTING MACHINE FOR THE CALCULATION OF THE OPTIMUM-DISTRIBUTION OF LOADS AMONG THE DIFFERENT-TYPE UNITS OF A HEAT-POWER ELECTRIC STATION. 13 July 62 [14]p. 1 ref. JPRS: 14464.
Order from OTS or SLA $1.60 62-32000

Trans. of Elektrichestvo (USSR) 1962, no. 4, p. 33-36.

DESCRIPTORS: *Power plants, *Thermoelectricity, Electric power production, Costs, Operation, Fuel consumption, Load distribution, Determination, Digital computers, Scheduling, Computers.

The employment of the computing machine described makes it possible to calculate the optimum mode of operation at the heat-power electric stations with the switching system of any complexity. The feasibility of obtaining by means of the computing machine the aggregate characteristic of the relative increases of the fuel consumption of a heat-power electric station may be utilized in the automation of the load distribution among the stations of a power system. The circuit arrangement of the computing machine makes it possible to obtain the aggregate characteristic of the relative increases without the replacement or retuning of the units making it up when changing the operating mode of the station. (Author)

Pokrovskii, V. L.
GENERAL METHOD OF SEEKING THE OPTIMUM DISTRIBUTION FOR LINEAR ANTENNAS. [1961]
4p. 3 refs. MDF P-171 [AFCRL-590] AD-262 526.
Order from OTS $0.50 62-11521

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1961, v. 138, no. 3, p. 584-586.

DESCRIPTORS: *Antennas, Linear systems, Antenna radiation patterns, Lobing, Fourier analysis, Series, Mathematical analysis.

The problem of finding the optimum distribution of these parameters is reduced, in principle, to a numerical computation. Not only discrete but also continuous current distributions without singularities can be analyzed in such a general formulation if they are prescribed in the form of finite Fourier sums.

Rybalka, V. I. and Shapovalov, I. K.
UNIT FOR OBTAINING ULTRA-FINE CAST WIRE IN GLASS INSULATION FROM LIQUID METAL (Ustanovka dlya Polucheniya iz Zhidkovo Metalla Tonchaishei Litoi Provoloki so Steklyannoi Izolyatsiei). 2 Oct 61, 3p. (1 fig. omitted). H-9968.
Order from OTS $0.50 62-11702

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1959, no. 6, p. 19-20.

DESCRIPTORS: Wire, *Electric wire, *Glass, *Insulating materials, Materials, *Liquid metals, Metals, Production, Economics.

Sheindlin, A.
ELECTRICITY FROM A GAS JET. 14 Feb 62 [8]p.
JPRS: 12467.
Order from OTS or SLA $1.10 62-19790

Trans. from Izvestiya (USSR) 1961, 25 June.

DESCRIPTORS: Electricity, *Thermoelectricity, Production, Power plants, *Magnetohydrodynamics, *Generators, Plasma physics.

Mechanical Engineering

MOSCOW STEAM ELECTRIC POWER PLANT NO. 1 (MOSENERGO NO. 1): [INFORMATION ON CAPACITY 1937-60]. 27 Jan 60 [8]p. (4 figs. omitted) 34 refs.
AF 1419413.
Order from OTS or SLA $1.10 61-28336

DESCRIPTORS: *Steam power plants, *Electric power production, Steam condensers, Steam turbines, Boilers, Heating, Power plants.

Kolodovskii, G. E.
GENERALIZATIONS OF THE EXPERIMENTAL DATA FOR THE CIRCULATION OF WATER IN BOILERS, tr. by Gordon R. Love. 4 May 61 [39]p. (7 figs. 2 tables omitted) 17 refs.
Order from OTS or SLA $3.60 AEC-tr-4659

Trans. of Teploenergetika (USSR) 1959, no. 1, p. 3-29. Another trans. is available from OTS $2.75 in AEC-tr-4496, Dec 61, 178p.

DESCRIPTORS: *Water, *Boilers, Pressure, Gases, Liquids, Mixtures, Temperature, Experimental data, Heat transfer.

Despite an immense volume of experimental material resulting from twenty test runs, and the data from a large number of analytic investigations by other authors, until now there has been no satisfactory generalization, correlating the working material, and the initial conditions and using fundamental physical quantities, convenient for practical calculation of the relative difference between the theoretical and the true values describing the process of circulation in boilers. The results of an investigation into this correlation are the body of the present paper. (Author)

Ordnance, Missiles, and Satellite Vehicles

ELECTRONIC AIR DEFENSE SYSTEM IN THE USSR: [GENERAL INFORMATION] 1956-59. 26 Jan 60 [4]p. (1 fig. omitted) 11 refs. AF 1419403.
Order from OTS or SLA $1.10 61-28332

DESCRIPTORS: *Antiaircraft defense systems, Command systems, *Digital computers, Computers.

IMPROVEMENTS IN SHOTGUN CARTRIDGES, tr. by L. A. N. 14 June 62, 4p. (4 figs. omitted).
Order from OTS or SLA $1.10 62-25683

Trans. of French patent 973,692, gr. 16, cl. 4, by Manufacture de Machines du Haut-Rhin, appl. 14 Nov 41, granted 20 Sep 50, pub. 13 Feb 51.

DESCRIPTORS: *Small arms, Small arms ammunition, Gun, *Cartridges, Design.

Shotgun cartridges are proposed characterized by a case consisting of two independent parts capable of being united for use, the body of the case containing the inert elements of the cartridge (wad and shot), and the base being designed to receive, prior to the assembly of the cartridge, the percussion cap and the powder.

SPACE FLIGHT. 6 Aug 62, 7p. JPRS: 14737.
Order from OTS $0.50 62-11719

Trans. of Nauka i Zhizn (USSR) 1962 [v. 29] no. 5, p. 39-42.

DESCRIPTORS: *Space flight, Spaceship cabins, *Closed-cycle ecological systems, Food, Manned, *Weightlessness.

Contents:
The biosphere in the cabin of a space ship, by V. Borisov and A. Sergeev
Manned interplanetary flights of long duration, by K. E. Tsiolkovskii
Lost and restored weight, by B. Viktorov.

TRACKING OF SATELLITES AND SPACE PROBES IN THE USSR: ANNOTATED BIBLIOGRAPHY 1959, 24 May 60 [15]p. 64 refs. AF 1419606.
Order from OTS or SLA $1.60 61-28348

Trans. from USSR publications 1959.

DESCRIPTORS: *Satellite vehicles, *Space probes, *Tracking, *Bibliography.

Aksenov, E. P., Grebenikov, E. A., and Demin, V. G.
GENERAL SOLUTION OF THE PROBLEM CONCERNING THE MOTION OF AN ARTIFICIAL SATELLITE IN THE NORMAL GRAVITATIONAL FIELD OF THE EARTH, tr. by B. W. Kuvshinoff. 17 May 62, 11p. 10 refs. APL/JHU TG 230-T298.
Order from OTS $0.50 62-11687

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 8, p. 64-71.

DESCRIPTORS: *Satellite vehicles, *Satellite vehicle trajectories, Motion, Earth, Gravity, *Equations of motion, Differential equations, Solutions.

The general solution of the problem of artificial satellite motion is obtained on the basis of an examination of an analog of the problem of two stationary points. The motion is analyzed of a material point within the gravitational field of two stationary centers of equal mass separated by an imaginary distance. The power function of the problem, with appropriate selection of the imaginary distance between the centers of attraction, can well-approximate the potential of the real earth. The imaginary distance is introduced because, at least for the first terms of the expansion for the earth's potential into Legendre polynomials, the signs alternate. The quadrature obtained permits detailed quantitative and qualitative study of satellite motion. These studies concern firstly the determination of possible and impossible regions of motion, clarification of the nature of secular and mixed terms, stability of various types of motion, provide convenient working formulas for each type of motion, methodology for computing orbits, etc.

Kucherevskii, G. A., Tsvetkov, S. A. and others.
A DEVICE FOR CONTROLLING THE HYDRAULIC PARAMETERS OF THE INJECTORS OF LIQUID-FUEL ROCKET ENGINES. 25 Apr 62 [4]p. FTD-TT-62-289.
Order from OTS or SLA $1.10 62-24346

Unedited rough draft trans. of Soviet patent no. 135696 (668331/25) 30 May 60.

DESCRIPTORS: *Rocket motors, *Rocket fuels, *Liquid rocket propellants, Hydraulic cylinders, Injectors, Control

This device for controlling the hydraulic parameters of the injectors of liquid-fuel rocket engines, equipped with a clamping head to hold the injectors, has the following special feature: in order to increase the control, the clamping head is in the form of a driving plate which swivels and can be adjusted relative to its axis. The device uses hydraulic cylinders to drive the plate. For automatic resetting and turning of the plate during the testing, a sector-type distributor is used; this feeds the liquid into the cylinder cavities, and the cylinder rods are kinematically attached to the plate. (Author)

Kuniewski, Henryk.
TRANSMITTING EQUIPMENT OF A SYSTEM OF NONPERIODIC IMPULSES IN LONG-RANGE TELEMETRY. 24 Aug 61 [22]p. JPRS: 8774.
Order from OTS or SLA $2.60 62-19472

Trans. of Przeglad Telekomunikacyjny (Poland) 1961 [v. 34] no. 3, p. 78-84.

DESCRIPTORS: *Telemetering, Telemeter systems, *Telemetering transmitters.

After an introductory discussion of the basic properties of the impulse systems of long-range telemetry, the chief characteristics of nonperiodic impulse systems are considered, namely: the system of counting, time, interval and code of impulses. A number of typical examples of the construction of transmitting converters and transmitters of a nonperiodic pulse system of long-range telemetry are described. (Author)

Laborey, Fernand and Hebert, Lucien.
CARTRIDGE CASE, tr. by G. E. 14 June 62, 6p. (5 figs. omitted).
Order from OTS or SLA $1.10 62-25681

Trans. of French patent 919,583, gr. 11, cl. 4, appl. 18 Sep 45, granted 9 Dec 46, pub. 12 Mar 47.

DESCRIPTORS: Cartridges, *Cartridge cases, Preparation, Materials, *Plastics, Metals.

A cartridge case is proposed characterized in that the tube is made of plastic material and the base, at least partly of metal.

Nikolaev, Yu.
ROCKETS FLY ON COURSE. 5 Mar 62 [15]p. JPRS: 12784.
Order from OTS or SLA $1.60 62-23419

Trans. from Ekonomicheskaya Gazeta (USSR) 1961, no. 10, p. 37.

DESCRIPTORS: *Rockets, Guided missiles, *Rocket trajectories, *Rocket targets, Rocket motors, Control systems.

Sergeev, B.
BEFORE A ROCKET LAUNCH. 19 Mar 62 [6]p. FTD-TT-62-359.
Order from OTS or SLA $1.10 62-24025

Unedited rough draft trans. from Komsomol'skaya Pravda (USSR) 1962, 27 Jan, p. 4.

DESCRIPTORS: *Rockets, *Launching, Control systems, Instrumentation, Targets

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Beganovic, A. H. and Muftic, A.
ON CHEMISM OF THE MUSCLES IN CONNECTION WITH POSTMORTEM CHEMICAL-PHYSICAL CHANGES IN THE MEAT [AND] ON THE BIOCHEMICAL ACTIVITY OF BACTERIA IN THE PROCESS OF DECOMPOSITION OF MEAT (O Kemizmu Misica u Vezi s Postmortalnim Kemijsko-Fizikalnim Promenama u Mesu [and] O Biohemiskoj Aktivnosti Bakterija u Procesu Razgradnje Mesa) tr. by Simeon Pribicevic. 1962, 12p. 14 refs. PL-480 Agr.
Order from OTS $0.50 60-21632

Trans. of Veterinaria (Yugoslavia) 1958, v. 7, no. 1, p. 153-155 and no. 2, p. 369-372.

DESCRIPTORS: Chemical analysis, *Muscles, Tissues (Biology), *Bacteria, Decomposition, *Meat, Biochemistry.

Dungal, Niels.
CAN SMOKED FOODS BE CANCEROGENIC? [1962] 5p.
Order from K-H $6.25 K-H 9353-a

Trans. of der Krebsarzt (Austria) 1959, v. 14, no. 1, p. 22-24.

DESCRIPTORS: Smokes, *Food, *Cancer, Cancer research.

Korshakov, P. N.
EFFECT OF COBALT IN INCREASING THE NUTRITIVE VALUE OF YEAST-ENRICHED FEEDS. [1962] 3p.
Order from ATS $5.75 ATS-44P61R

Trans. of Zhivotnovodstvo (USSR) 1953, no. 5, p. 61-63.

DESCRIPTORS: *Cobalt, *Nutrition, *Food, Yeast, Additives.

Metlitskii, L. V. and Mukhin, E. N.
THE EFFECT OF IONISING RADIATIONS OF THE STORING OF POTATOES, VEGETABLES AND FRUITS (Deistvie Ioniziruyushchikh Izluchenii na Sokhranyaemost' Kartofelya, Ovoshchei i Plodov) tr. by V. A. Solodukhin. [1962] [10]p. (foreign text included). [CSIRO] Trans. no. 5660.
Order from OTS or SLA $1.10 62-25640

Trans. of Konser[vnaya] i Ovosh[chesushil'naya] Prom[yshlennost'] (USSR) 1961 [v. 16] no. 7, p. 22-24.

DESCRIPTORS: *Fruits, *Vegetables, *Potatoes, Storage, Ionization, Radiation effects.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
FOOD PRESERVATION BY IRRADIATION. May 62, 11p. 185 refs. OTS Selective Bibliography SB-403, revised
Order from OTS $0.10 OTS SB-403

DESCRIPTORS: *Food, *Preservation, Radiation effects, *Bibliography, Toxicity, Packaging, Storage, Pasteurization.

Lists 185 reports and translations on food preservation by irradiation added to the OTS collection through May 1962. Includes information on sterilization, pasteurization, toxicity, packaging, storage life, and food irradiation facilities, as well as modifications of flavor, color, and texture. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
FOOD PRESERVATION (EXCEPT BY IRRADIATION). May 62, 8p. 91 refs. OTS Selective Bibliography SB-412, suppl. 1.
Order from OTS $0.10 OTS SB-412, Suppl. 1

DESCRIPTORS: *Food, Preservation, Pasteurization, Dehydration, Freeze-drying, Freezing, Bibliography.

Lists 91 domestic and foreign references on food preservation by processes other than irradiation added to the OTS collection June 1960 through May 1962. Includes reports and translations on food preservation by sterilization, pasteurization, biochemical treatment, smoke-curing, salt-curing, dehydration, freeze-drying, freezing, refrigerating, etc. Reports and translations on food preservation by irradiation are listed in Selective Bibliography SB-403. (Author)

Dyekjaer, Jens Christian Christensen.
METHOD OF HANDLING FROZEN MATERIAL [AND] METHOD TO PACKAGE MATERIAL OF ARBITRARY NATURE BY USING A FOIL OF THERMOPLASTIC MATERIAL. [1959] 1p. MDF D-130.
Order from OTS $0.50 62-11173

Trans. of claims of Danish patent 79469 appl. 13 Oct 50, issued 13 June 55, pub. 27 June 55 and Danish patent 84548 (English patent 575954) appl. 6 June 55, issued 4 Nov 57, pub. 10 Mar 58.

DESCRIPTORS: *Frozen food, Containers, *Packaging, Materials, *Plastics.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

MACHINE BUILDER, 1960, NO. 5: [SELECTED ARTICLES]. 29 June 62, 6p. 1-1459.
Order from OTS $0.50 62-11721

Trans. of Mashinostroitel' (USSR) 1960, no. 5, p. 32-34.

DESCRIPTORS: *Machines, Construction, *Aluminum alloys, Casting, *Steel, Electrolytes, *Reinforced concrete, Reinforcing steel.

Contents:
Casting of aluminum alloys under pressure with lowered temperatures, by A. B. Zuev
Burnishing of steel by a stream of electrolyte, by E. Yu. Yuganson
New materials in machine building, by K. V. Ogorodnikov.

Salengro, Paul-Andre.
IMPROVEMENTS IN PNEUMATIC DRILLS, tr. by J. R-P. 23 May 62, 27p. (17 figs. omitted).
Order from OTS or SLA $2.60 62-25027

Trans. of French patent 1,231,192, internat. cl. B 25d -- E 02d, appl. filed 9 Apr 59, granted 11 Apr 60, pub. 27 Sep 60.

DESCRIPTORS: *Pneumatic devices, *Drills, Design.

A pneumatic drill comprising two principal parts, one of which, serving for manipulation of the apparatus, is constructed in the form of a casing in which the other part, constituting the motor element of the apparatus, can slide. Means are provided for damping the vibrations transmitted by the latter part to the former. Said pneumatic drill has at least one tubular element, centrally arranged in relation to the second part, said tubular element connecting the first part to a longitudinal passage incorporated in the drilling tool, for the purpose of permitting injection of a fluid such as air or water into the borehole, said tubular element being mounted in the said first part in such a way that it can cross the wall of the chamber through which the injection fluid is delivered, with tightness but with a freedom of movement sufficient to be able to withstand the play which can exist between said parts. (Author)

Salmon, Benjamin and Bertin, Jean-Henri.
IMPROVEMENTS IN COMBUSTION DEVICES, tr. by F. H. B. 15 June 62, 14p. (20 figs. omitted).
Order from OTS or SLA $1.60 62-25686

Trans. of French patent 1,085,458, gr. 5, cl. 8, by Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, appl. 27 June 53, granted 28 July 54, pub. 2 Feb 55.

DESCRIPTORS: Gas turbines, Turbines, *Combustion chambers, Design, Combustion, Flame propagation, Jets, Jet engines.

An improvement in combustion devices is proposed that provides downstream of the point of origin of a flame zone, means suitable to produce in the boundary zone of the flame, small auxiliary gas jets which produce in the fluid a divided turbulence promoting the transverse propagation of the flame.

Savinov, L. I.
PRECISION GRINDER MODEL MSh-182. 18 Jan 62 [5]p. FTD-TT-61-376; AD-270 753.
Order from OTS or SLA $1.10 62-15835

Unedited rough draft trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1961, no. 7, p. 40-41.

DESCRIPTORS: Machine tools, *Grinders, Precision finishing, Ball bearings, Industrial production.

Transport, Traction and Hoist Facilities

Chistov, N.
THE KRAS-250 VEHICLE (Avtomobil' KrAz-250) tr. by W. W. 30 Apr 62, 5p. I-1229.
Order from OTS $0.50 62-11690

Trans. of Za Rulem (USSR) 1962 [v. 20, no. 2] p. 15-17.

DESCRIPTORS: *Cargo vehicles, *Passenger vehicles, Automotive industry, *Diesel engines, Trailers, Tractors.

Milyukin, F. P.
DEVELOPMENT OF RAILROADS IN TSELINNYI KRAI (Razvitie Zheleznykh Dorog v Tselinnom Krae) tr. by Vedral. 11 Oct 61, 8p. H-9826.
Order from OTS $0.50 62-11704

Trans. of Zheleznodorozhnyi Transport (USSR) 1961 [v. 43] no. 5, p. 8-14.

DESCRIPTORS: *Transportation, *Railroads, Traffic, Railroad tracks, Railroad cars.

Nalichaev, V. N. and Fedulov, V. F.
LAYING AND MAINTENANCE OF RAILROAD LINES ON REINFORCED CONCRETE TIES, tr. by E. C. B. P. 6 June 62, 43p. (38 figs. omitted). I-1432
Order from OTS $1.25 62-11699

Trans. of mono. Uklada i Soderzhanie Puti na Zhelezobetonnykh Shpalakh, Moscow, 1961, p. 3-70.

DESCRIPTORS: *Railroads, *Railroad tracks, Foundations (Structures), Materials, *Reinforced concrete, Construction, Maintenance, Operation, Concrete.

This pamphlet presents generalizations in the experience of laying and operating lines on reinforced concrete ties, presents the main features in the work of such lines, and provides a series of recommendations directed towards an improvement in the technology of laying and operating a splieced and spliceless railroad line. (Author)

Zubarev, A. and Murav'ev, V.
ENGINES FOR NEW ZIL TRUCKS (Dvigateli dlya Novykh Gruzovykh Avtomobilei ZIL) tr. by M. E. 20 May 62, 8p. I-1236.
Order from OTS $0.50 62-11698

Trans. of Avtomobil'nyi Transport (USSR) 1961 [v. 39] no. 1, p. 36-41.

DESCRIPTORS: *Cargo vehicles, Trailers, Tractors, *Internal combustion engines, Automotive industry.

MATERIALS

Gonchar, P. D.
ON THE IMPROVEMENT OF THE CONTROL OF TECHNOLOGICAL PROCESSES IN THE CONSTRUCTION MATERIALS INDUSTRY (Ob Ulushchenii Kontrolya Tekhnologicheskikh Protsessov v Promyshlennosti Stroitel'nykh Materialov). 28 Nov 60, 8p. JPRS: 7204.
Order from OTS $0.50 61-11607

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1960, v. 5, no. 2, p. 228-229.

DESCRIPTORS: *Construction materials industry, Control, Manufacturing methods.

Pariser, Rudolf.
NEWER RESULTS IN THE FIELD OF ELASTOMER-RETICULATION (NEOPRENE W AND VITON A). [1962] 2p.
Order from SLA $1.10 62-14032

Trans. of article from an unidentified source, n.d.

DESCRIPTORS: *Elastomeres, Synthetic rubber, Vulcanization.

This document is either the translation of an abstract or a condensed translation of a longer article.

Wentzel, H.
CONDUCTING ADHESIVES (Leitende Kleber). [1962] [13]p. (foreign text included) 8 refs.
Order from SLA $1.60 62-16709

Trans. of Elektrie (Germany) 1961 [v. 15] no. 2, p. 12-15.
Also available without foreign text from SLA $1.10 as 62-14665 [1962] [9]p.

DESCRIPTORS: *Adhesives, *Resin adhesives, Metal powders, *Conductivity, Preparation, Electrical engineering.

For abstract see Technical Translations 8: 154, 1962.

Ceramics and Refractories

GLASS AND CERAMICS IN THE USSR. 12 Apr 62 [7]p. JPRS: 13473.
Order from OTS or SLA $1.10 62-24011

Trans. of Steklo i Keramika (USSR) 1961 [v. 18] no. 11, p. 46-47.

DESCRIPTORS: *Glass, *Ceramic materials, Industrial plants, Automation, Production.

Contents:
Glass and ceramics at the Exposition of Achievements of the National Economy for 1960
Seminar concerning the automation of production processes in glass plants, by K. M. Bezpalov.

Clerc, P. le.
DIFFUSION CHARACTERISTICS OF MOBILE IONS IN A VITREOUS NETWORK (Caractères de Diffusion des Ions Mobiles dans le Réseau Vitreux). [1962] [20]p. (foreign text included) 12 refs.
Order from SLA $1.60 62-16155

Trans. of mono. Congrès International du Verre (International Congress on Glass) (no. 4) Paris, 1956. Paper VI-5, 5p.

DESCRIPTORS: *Glass, Lithium, Potassium, Sodium, Silver, *Ions, *Diffusion, Ion exchange, Tracer studies.

Measurements of the speed of diffusion of mobile ions such as Na, K, Ag in glasses of various types were operated at temperatures of about 300degC. The ion exchange resulting from this diffusion was studied and in certain cases the maximum fraction which could be exchanged, was established. In this study to a great extent radioactive conductive elements were used. (Author)

Frank, H. H.
TECHNICAL-ECONOMIC INDEXES FOR THE FURNACES OF THE GLASS INDUSTRY (Technisch-Wirtschaftliche Kennziffern für die Öfen der Glasindustrie). [1962] [25]p. (foreign text included) 6 refs.
Order from SLA $2.60 62-10930

Trans. of Silikat Technik (East Germany) 1953, v. 4, no. 5, p. 195-199.

DESCRIPTORS: *Glass, Production, Economics, Indexes, Management engineering.

Greschat, K.-H.
HEATING AND HEAT-REGENERATION WITH GLASS MELTING TANKS (Beheizung und Wärmeregeneration bei Glasschmelzwannen). Paper presented at HVG Colloquium on Glass Melting Furnaces, Frankfurt a. M. 23 Oct 58. [1962] [33]p. (foreign text included) 16 refs.
Order from SLA $3.60 62-10932

Trans. of Glastechnische Berichte (West Germany) 1959, v. 32, no. 6, p. 231-239.

DESCRIPTORS: *Glass, Melting, *Oil-burning furnaces, Refractory materials, Construction, Fuel oils, Heating, Heat exchangers, Tanks.

Gypser, Joachim.
GRINDABILITY OF GLASSES (Beitrag zur Schleifbarkeit von Gläsern). [1962] [23]p. (foreign text included) 7 refs.
Order from SLA $2.60 62-16133

Trans. of Silikat Technik (East Germany) 1955, v. 6, no. 9, p. 372-377.

DESCRIPTORS: *Glass, *Grinders, *Grinding wheels, Production, Abrasion, Chemical properties, Physical properties.

Some 38 glasses of different composition were tested for their grindability as depending on the molar composition, comparing it with the other properties of the glass. The procedure is described. Some technical glasses and a selection of the company's own glasses were examined for grindability as a function of the grinding speed. (Author)

Kerkhof, Frank and Manitz, Gerhart.
FRACTURE TRACING BY INTERFERING ULTRASOUND WAVES (Bruchzeichnung durch Interferierende Ultraschallwellen). [1962] [18]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-16140

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1958, v. 31, no. 10, p. 377-381.

DESCRIPTORS: *Glass, *Fracture (Mechanics), *Ultrasonic radiation, *Acrylic resins, Elasticity, Brittle materials, Ultrasonics.

Merker, Ludwig and Wondratschek, Hans.
A SERIES OF GLASSES WITH UNUSUAL COMPOSITION (Eine Reihe von Gläsern Ungewöhnlicher Zusammensetzung). [1962] [8]p. (foreign text included) 5 refs.
Order from SLA $1.10 62-16137

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1957, v. 30, no. 11, p. 473-475.

DESCRIPTORS: *Glass, *Lead compounds, *Sulfates, Fused materials, Optics.

In the three-phase system $PbO-SiO_2$ SO_3 one obtains homogeneous glasses with extraordinarily high SO_3 content. Some such glasses are described. (Author)

Merker, Ludwig and Wondratschek, Hans.
SOME PHYSICAL PROPERTIES OF LEAD SILICATE GLASSES WITH A HIGH SULFATE CONTENT (Einige Physikalische Eigenschaften von Bleisilikat-Gläsern mit Hohem Sulfatgehalt). [1962] [17]p. (foreign text included) 12 refs.
Order from SLA $1.60 62-16138

Trans. of Glastechn[ische] Berichte (West Germany) 1959, v. 32, no. 2, p. 54-58.

DESCRIPTORS: *Glass, *Lead compounds, *Silicates, *Sulfates, Chemical analysis, Physical properties, Production.

The density, thermal expansion, transformation point, and softening temperature, surface tension and refraction of light are measured on lead silicate glasses with a high sulfate content and compared with the behavior of sulfate-free glasses. The special features of these glasses are discussed. (Author)

Merker, Ludwig and Wondratschek, Hans.
SOME REMARKS ON LEAD ORTHOSILICATE AND GERMANATE AND THEIR GLASSINESS (Einige Bemerkungen zum Bleiorthosilikat und -Germanat und deren Glasigkeit). [1962] [10]p. (foreign text included) 9 refs.
Order from SLA $1.10 62-16136

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1957, v. 30, no. 11, p. 471-473.

DESCRIPTORS: *Glass, Fused materials, Lead compounds, Silicates, Germanium compounds, Aluminum compounds, Oxides.

The data to be found in the literature on the glassiness of lead orthogermanate and lead orthosilicate were checked. It was found that the results known to date were obtained on contaminated melts and must be corrected accordingly. (Author)

Metzner, Roland, Scheer, Max-Martin, and Scholze, Horst.
A RAPID QUANTITATIVE BORON DETERMINATION IN GLASSES WITH THE AID OF THE ABSORPTION OF NEUTRONS (Eine Schnelle Quantitative Borbestimmung in Gläsern mit Hilfe der Absorption von Neutronen). [1962] [16]p. (foreign text included) 8 refs.
Order from SLA $1.60 62-10935

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1958, v. 31, no. 7, p. 257-260.

DESCRIPTORS: *Glass, *Boron, Neutron absorption, Thermal neutrons, Determination.

A nuclear physical measuring procedure is given, which permits a comparatively rapid and simple quantitative determination of the B_2O_3 content of glasses with the aid of neutron absorption in the boron. With the experimental arrangement used the measuring accuracy is plus-or-minus 4% of the value, but can easily be increased. (Author)

Röper, E.
AUTOMATIC GAGING OF WALL THICKNESS FOR GLASS CONTAINERS (Ein Beitrag zur Automatischen Wandstärkenmessung bei Glas). [1962] [5]p. (foreign text included).
Order from SLA $1.10 62-14876

Trans. of Glas-Email-Keramo-Technik (West Germany) 1957, v. 8, no. 10, p. 390-391.

DESCRIPTORS: *Glass, *Containers, Thickness, Measurement, *Gages, Automatic.

A gauge for measuring the thickness of glass walls is described made in its present design thus, that, without mechanical adjustment being necessary, the thickness of any (transparent) glass sheet is indicated automatically. The manner of measuring is also well adapted for fully automatically measuring and thereby assorting hollow glass articles. (Author)

Schardin, Hubert.
RESULTS OF CINEMATOGRAPHIC INVESTIGATION OF GLASS [FRACTURE] PROCESS, PT. II (Ergebnisse der Kinematographischen Untersuchung des Glasbruchvorganges. II. Teil). [1962] [40]p. (foreign text included) 8 refs.
Order from SLA $3.60 62-16468

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1950, v. 23, no. 3, p. 67-79.

DESCRIPTORS: *Glass, Fracture (Mechanics), Photographic analysis.

Schmidt, Kurt.
GLASS TANKS AND THROATS (Wannenbecken und Durchlass von Glasschmelzöfen). Paper presented at HVG Colloquium on Glass Melting Furnaces, Frankfurt a. M., 23 Oct 58. [1962] [17]p. (foreign text included).
Order from SLA $1.60 62-10944

Trans. of Glastechnische Berichte (West Germany) 1959, v. 32, no. 6, p. 217-221.

DESCRIPTORS: *Glass, *Melting, Tanks, Oil-burning furnaces, Fuel consumption, Operation, Construction.

The influence of the length-width ratio, of the bath depth and of the throat construction on the operating behavior of various types of tanks is discussed on the basis of practical experiences. Standard dimensions have been developed in the course of time and proved expedient. Operating data of various tanks and the dimensions of the throats used are given on the basis of several examples. (Author)

Stepanenko, M. G.
ESTABLISHING THE CORRECT DESIGN FOR REGENERATORS (Festlegung der Zweckmässigen Abmessungen von Regeneratoren) tr. from Russian by Y. Kvederavich. [1962] [19]p. (foreign text in German included) 16 refs.
Order from SLA $1.60 62-10947

Trans. of Silikat Technik (East Germany) 1953, v. 4, no. 4, p. 147-150 (originally pub. Steklo i Keramika (USSR) 1950, v. 7, no. 2, p. 5-9.

DESCRIPTORS: *Glass, Melting, *Furnaces, *Heat exchangers, Design, Corrections

Teisen, Th.
THE UNIFLOW CONTINUOUS GLASS MELTING FURNACE (Der Uniflow-Wannen-Ofen). [1962] [19]p. (foreign text included) 4 refs.
Order from SLA $1.60 62-10946

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1958, v. 31, no. 9, p. 349-353.

DESCRIPTORS: *Glass, Melting, Production, Oil-burning furnaces, Fuel consumption.

Construction and working method of the Uniflow continuous glass melting furnace is explained. This furnace type is suitable above all for medium size units; it is shown that it fulfills the requirements to be set a good melting furnace to a high degree. (Author)

Thring, M. W.
HEAT TRANSFER FROM OIL FLAMES IN MELTING FURNACES (Wärmeübergang aus Ölflammen in Schmelzöfen). Lecture at Glass Technical Convention (no. 31) Frankfurt a. M. 21 May 57. [1962] [47]p. (foreign text included) 27 refs.
Order from SLA $4.60 62-10948

Trans. of Glastechnische Berichte (West Germany) 1957, v. 30, no. 10, p. 413-425.

DESCRIPTORS: *Glass, *Melting, Heat transfer, Combustion, Flames, Oils, Fuels, Jets, Gases.

Investigations on turbulent diffusion flames operated with gas and oil in the experimental furnace in Ymuiden led to the setting up of a formula which permits making a statement regarding the flame length in relation to the air drawn in by the jet. The emission capacity of the flame could also be calculated from the soot concentration at the flame axis, whereby it proved to be dependent on the C:H ratio of the fuel and on the absolute flame length. The flame temperature is directly dependent on the thermal equilibrium in the individual flame sections. Considerably higher combustion intensities can be achieved with other types of oil flames, but they usually do not yield the flame required for the melting furnaces. A simplified equation for the heat transfer was developed which permits predicting the influence of form, length and emissioncapacity of the flame on the melting velocity. The unknown constants of the equation (bath coverage by the flame, effective heat resistance of the charge) can be determined in this by a comparison with a known furnace. Air atomization proved to be better than steam; good bath coverage and high emission capacity of the flame are very important. (Author)

Trier, Wolfgang.
ON THE DEVELOPMENT OF FLAMES (Über die Ausbildung von Flammen). [1962] [10]p. (foreign text included) 6 refs.
Order from SLA $1.10 62-10949

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1956, v. 29, no. 11, p. 426-428.

DESCRIPTORS: *Flames, Gases, Combustion, Gas flow, Turbulence, Jets, Jet mixing flow, Flame propagation, *Glass, Melting.

The processes which contribute decisively to the formation of flames are discussed. A mathematical conception and tying in of the individual fundamental magnitudes is today possible to a certain extent only in flames which burn like sets. Pertinent English and American works are referred to. (Author)

Weber-Klein, Paul.
MEASURING AND CONTROL METHODS IN GLASS WORKS. I. UNDERSTANDING MEASUREMENT AND CONTROL MAGNITUDES (Mess- und Regeltechnik in Glashütten. I. Erfassung von Mess- und Regelgrössen). [1962] [71]p. (foreign text included).
Order from SLA $7.60 62-16399

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1959, v. 32, no. 3, p. 107-120.

DESCRIPTORS: *Glass, Industrial plants, Measurement, Control, Instrumentation, Melting, Combustion chambers, Temperature control.

Weber-Klein, Paul.
MEASURING AND CONTROL METHODS IN GLASS WORKS. II. MEASURING AND CONTROL DEVICES (Mess- und Regelungstechnik in Glashütten. II. Geräte zur Messung und Regelung). [1962] [74]p. (foreign text included) 80 refs.
Order from SLA $7.60 62-16398

Trans. of Glastechnische Berichte (West Germany) 1959, v. 32, no. 4, p. 158-172.

DESCRIPTORS: *Glass, Industrial plants, Measurement, Control, Instrumentation, Melting, Temperature control, Combustion chambers.

(See also 62-16399)

Weber-Klein, Paul.
THE RAW MATERIAL ECONOMY OF A GLASS SMELTER, I (Die Versorgungswirtschaft einer Glashütte I). [1962] [26]p. (foreign text included) 27 refs.
Order from SLA $2.60 62-10951

Trans. of Glastechnische Berichte (West Germany) 1957, v. 30, no. 5, p. 157-163.

DESCRIPTORS: *Glass, *Smelting, Fuel consumption, Gases, Oils, Fuels, Economics.

Discussed are the construction, the operation, the supervision by measurements of producer gas, pipeline-gas, oil-heating, and bottled-gas installations on the base of practical experience and statements from the literature. (Author)

Weber-Klein, Paul
THE RAW MATERIAL ECONOMY OF GLASS SMELTER, II (Die Versorgungswirtschaft einer Glashütte II). [1962] [40]p. (foreign text included) 18 refs.
Order from SLA $3.60 62-10952

Trans. of Glastechnische Berichte (West Germany) 1957, v. 30, no. 6, p. 213-221.

DESCRIPTORS: *Glass, *Smelting, Blowers, Compressed air, Oxygen consumption, Water supplies, Industrial equipment, Economics.

The construction and the operation of installations is reported on, also of standby equipment, for the air for blowers, for vacuum, compressed air, oxygen, water needed in plant operations, warm water, cold water, steam, also described are installations which receive the electric current from an external source and the distributing devices for same inside the plant, finally installations for removal of sewage. Some ideas are presented how to supervise the operations of all these equipments. (Author) (See also 62-10951)

Fuels, Lubricants, and Hydraulic Fluids

THE COMPREHENSIVE DEVELOPMENT OF THE OFFSHORE PETROLEUM DEPOSITS IN THE AZERBAIDZHAN SSR. 6 Mar 62 [5]p. JPRS: 12892.
Order from OTS or SLA $1.10 62-23345

Trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1961 [v. 40] no. 5, p. 1-2.

DESCRIPTORS: *Petroleum, Deposits, Petroleum industry, Production, *Well drilling, Geology, Caspian Sea, Climatic factors, Metals, Corrosion inhibition, Coatings

Schwank, Günther.
GAS HEATING AND RADIATION. [1962] 21p. (9 figs. omitted) 15 refs.
Order from SLA $2.60 62-16762

Trans. of GWF; [das] Gas- und Wasserfach (West Germany) 1949, v. 90, no. 8 [p. 169-174].

DESCRIPTORS: Housing, *Heating, *Gas burners, Convection, *Thermal radiation, Heaters, Physiology, Economics, Operation, Fuel consumption.

Leather and Textiles

BERATEX. [1962] [5]p.
Order from SLA $1.10 62-14663

Trans. of unidentified mono., n.p., n.d.

DESCRIPTORS: *Threads, *Textiles, *Synthetic fibers, Ethylenes, Polymers, Cordage.

The properties and uses of yarns and fabrics made of Beratex fibers are reviewed.

Bobeth, Wolfgang and Piechottka, Gertraut.
MICROSCOPIC SWELLING STUDIES ON MECHANICALLY STRESSED POLYAMIDE FIBERS. [1962] 10p. (15 figs. 3 tables omitted) 6 refs.
Order from SLA $1.10 62-16622

Trans. of Faserforschung und Textiltechnik (Germany) 1959, v. 10, no. 10, p. 464-[472].

DESCRIPTORS: *Fibers, *Amides, *Polymers, Stresses, Microanalysis, Sulfuric acid.

When exact experimental conditions are held constant, reproducible swelling studies on polyamides in sulfuric acid solution are possible. If the time interval is measured for the exactly defined swelling process, the result is a quantitative method of measuring and evaluating the qualitative state of polyamide fiber materials. It has been shown that graduated degrees of twisting, stretching, shearing, bending and squeezing stress on polyamide fibers decrease their swelling reaction times in large steps. Therefore previous mechanical stresses may be conveniently detected, at least in comparison, by the microswelling method. The method is useful for morphological fiber studies and in certain cases for industrial control. (Author)

Roth, Werner and Schroth, Rudi.
SPINNING AND [DRAWING] OF POLYCONDENSATE FILAMENTS. I. THE EFFECT OF SPINNING CONDITIONS ON THE STRETCHING PROCESS. [1962] 21p. (15 figs. omitted) 11 refs.
Order from SLA $2.60 62-16740

Trans. of Faserforschung und Textiltechnik (Germany) 1960, v. 11, no. 7, p. 312-319.

DESCRIPTORS: *Synthetic fibers, Production, Polymers, Amides, Esters, Stresses.

A method for the tracing of stress-elongation diagrams is described. The effect of the spinning conditions on the pre-orientation for polycondensate filaments (especially polyester filaments) is examined. Beside the maximum stretching rate, the natural stretching rate and the shrinking of the unstretched material is a measure of the pre-orientation. The changes of structure of the fiber during the formation of the filament from melting are discussed, and from the experimental results, it is concluded that rapid cooling condition causes a high degree of pre-orientation. (Author)

Paints and Finishes

Bugat, N.
IS THERE A POSSIBILITY OF NEW APPLICATIONS FOR NITROCELLULOSE IN LAQUERS? Apr 62, 4000 words.
Order from TTIS $24.00 TTIS 8012

Trans. of Pitture e Vernici (Italy) 1961, v. 37, Nov, p. 449-452.

DESCRIPTORS: *Nitrocellulose, *Varnishes

Habraken, L.
EXAMINATION OF ZINC WHITE BY THE ELECTRON MICROSCOPE. [1962] [16]p. (22 refs. omitted) 1 ref.
Order from SLA $1.60 62-10706

Trans. of Revue Universelle des Mines (France) 1948 [ser. 9] v. 4, no. 5, p. 335-345.

DESCRIPTORS: *Zinc pigments, Pigments, *Paints, Microanalysis, Electron microscope, Particles, Physical properties.

Photographic Materials

Castle, J. W., Jr.
NEW METHOD OF ELECTROLYTIC RECORDING OF IMAGES. [1962] 16p. (9 figs. omitted) 4 refs.
Order from OTS or SLA $1.60 62-16198

Trans. of Belgian patent 60697, by Kodak S.A., filed 28 July 61 (appl. U.S.A. 28 July 60).

DESCRIPTORS: *Electrophotography, *Photoconductive films, Photographic film, *Photographic paper, Photography, Colloids.

An image of electrical conductivity is formed in a photoconductive layer, the layer is placed in contact with an electrolyte which contains depositable ions; an image of chemical reducing agent is established, distributed according to said image, by passing a current through the layer according to this image of conductivity and causing the deposition of said ions; a colorant which can be bleached by reduction is applied to the surface of a receiving sheet of paper, said surface and said layer carrying the reducing agent are brought into contact with each other to bleach the areas of the surface of the receiving sheet which are in contact with the reducing agent, and the receiving sheet carrying the colorant is separated from the photoconductive layer. The receiving sheet is prepared by first applying to it a baryted layer, then a layer of hydrophilic colloid containing an acid and adjusted to a pH between 2.0 and 6.0 to constitute a reduction-inhibiting layer, then finally an absorbent layer of a hydrophilic colloid upon which the colorant is applied. The depositable ions are ions of a chemical reducing agent and constitute the deposited reducing image on the photoconductive layer.

Kirillov, N. I., Chikishev, Yu. G., and Zelikman, V. L.
CONTINUOUS PREPARATION OF PHOTOGRAPHIC EMULSIONS. [1962] 10p. (2 figs. omitted) 35 refs.
Order from OTS or SLA $1.10 62-14468

Trans. of Uspekhi Nauch[noi] Fot[ografii] (USSR) 1960, v. 7, p. [109]-114.
Another trans. is available from ATS $12.25 as ATS-66N52R [1961] 6p.

DESCRIPTORS: *Photographic emulsions, Synthesis

As a result of examining separate stages of the synthesis of photographic emulsions and the characteristics of various aspects of continuous processes, general plans have been presented for an efficient arrangement of a continuous process for the preparation of photographic emulsions, and its effectiveness was taken into consideration, as compared with the usual batch processes. (Author)

Levi, S. M.
THE EFFECT OF WETTING AGENTS IN MIXTURES AND IN MULTILAYERED GLAZES. [1962] 11p. 7 refs.
Order from OTS or SLA $1.60 62-14467

Trans. of Uspekhi Nauchnoi Fotografii (USSR) 1960, v. 7, p. 170-177.
Another trans. is available from OTS or SLA $1.60 as 61-20226 [1961] 11p.

DESCRIPTORS: Gelatin, *Photographic emulsions, Coatings, *Wetting agents, Mixtures, Physical properties, Adsorption, Surface tension.

For abstract see Technical Translations 7: 221, 1962.

Sheberstov, V. I.
AGEING PROCESSES AND THE STABILIZATION OF PHOTOGRAPHIC FILMS. [1962] 43p. (4 figs. omitted) 89 refs.
Order from OTS or SLA $4.60 62-14465

Trans. of Uspekhi Nauch[noi] Fot[ografii] (USSR) 1960, v. 7, p. 25-49.

DESCRIPTORS: *Photographic film, Stabilization, *Aging, Light, *Sensitivity, *Photographic emulsions, Silver compounds, Bromides, Organic compounds.

A survey.

Plastics

Cieleszky, V. and Nagy, F.
DETECTION OF ANTIOXIDANTS IN DIFFERENT VARIETIES OF POLYETHYLENE. [1962] [11]p. 11 refs.
Order from SLA $1.60 62-14290

Trans. of Z[eitschrift für] Lebensmittel-Untersuch[ung] u[nd] -Forsch[ung] (West Germany) 1961, v. 114, p. 13-18.

DESCRIPTORS: *Antioxidants, Detection, *Polymers, *Ethylenes, *Plastics, Plastics industry, Permanganates, Ultraviolet spectroscopy, Absorption spectra

To be able to evaluate polyethylene varieties from the point of view of food hygiene, a procedure was necessar with which polyethylene containing antioxidants can be differentiated from those free of antioxidant. The detection of the $KMnO_4$ consumption is unsuitable for this purpose. Also the ether extract residues give no information. A differentiation is possible by means of the absorption spectrum of the ether extract residues taken with cyclohexane-alcohol. (Author)

Hofmeier, Hermann.
POLYCARBONATES IN THE ELECTRICAL INDUSTRY. [1962] [8]p.
Order from SLA $1.10 62-10955

Trans. of ETZ [Electrotechnische Zeitschrift. Ausgabe] B. [der Electrotechniker] (Germany) 1959, v. 11, no. 10, p. 412-415.

DESCRIPTORS: *Carbonates, *Polymers, Insulating materials, Electric insulation, Dielectrics, Electrical industry, *Plastics, Films.

Jacobson, U.
THE EFFECT OF LUBRICANTS ON RIGID PVC. Paper read at the Technical part of the Conference arranged by the Swedish Plastics Federation, Stockholm, 21-24 Nov 60. [1962] 7p.
Order from ATS $13.50 ATS-77P61S

Trans. of mono. Plastteknik, Stockholm, 1960, sect. OC: II, p. 1-4.

DESCRIPTORS: *Vinyl chlorides, *Polymers, *Lubricants.

Kabin, S. P. and Usyarov, O. G.
APPLICATION OF THE ULTRASONIC METHOD IN THE QUANTITATIVE DETERMINATION OF THE COMPONENTS OF POLYETHYLENE-POLYPROPYLENE MIXTURES AND OF ETHYLENE-PROPYLENE COPOLYMERS. [1962] 6p. (4 figs. omitted) 7 refs.
Order from OTS or SLA $1.10 62-14460

Trans. of Vysokomol[ekulyarnye] Soed[ineniya] (USSR) 1960, v. 2, no. 1, p. 46-49.
Another trans. is available from OTS or SLA $1.10 as 61-14972 [1961] 4p.

DESCRIPTORS: *Polymers, *Ethylenes, *Propenes, Copolymerization, Ultrasonics, Determination, Mixtures.

For mechanical mixtures of polyethylene and polypropylene, two regions of mechanical losses are observed which are caused by relation processes. One of the regions of relaxation is caused by the presence of polyethylene, the other by that of polypropylene. The most probable times of relaxation of these losses do not change with a change in the concentration of the components. In the case of copolymers of ethylene and propylene, one single region of mechanical losses is observed whose maximum value lies at about 5°. The value of these losses at the maximum, up to a concentration of 40% of propylene, depends linearly on the concentration of the latter. This fact can be made use of in the analysis of copolymerization products of ethylene and propylene. This method of analysis may be used during the study of composition of other copolymers. (Author)

Orthner, Ludwig, Herzberg, Horst, and Frey, Hans Helmut.
PROCESS TO FABRICATE ELASTOMERIZED PLASTICS BASED ON POLYVINYL CHLORIDE. [1962] 6p. 1 ref.
Order from OTS or SLA $1.19 62-14538

Trans. of German patent 1,109,365, cl. 39 b 22/06, internat. cl. C 08 f., F 20854 IV b/39 b, by Farbwerke Hoechst A.-G., appl. 21 July 56, appl. pub. and specifications issued 22 June 61 (suppl. to patent appl. F 19221 IV b/39 b, specification 1,045,089)

DESCRIPTORS: *Vinyl chlorides, *Polymers, *Plastics, Polymerization, Additives.

The process is characterized by the fine dispersion of a solution of chlorinated polyethylene, resp. polypropylene or a copolymer of ethylene and propylene (insoluble in water), into an aqueous dispersion of polyvinyl chloride or vinyl chloride copolymer; or by the fine dispersion of dry polyvinyl chloride powder or dry copolymer powder, predominantly of vinyl chloride in a solution of chlorinated polyethylene, resp. polypropylene or a copolymer of ethylene and propylene (insoluble in water), followed by removal of the solvent, resp. the solvent and water by known methods.

Popov, V. A., Nikolaev, I. N. and others
THE PROBLEM OF THE PRODUCTION OF HEAT-RESISTANT POLYMERIC MATERIALS BY PYROLYSIS. FOAM COKE. [1962] 6p. (3 figs. omitted) 8 refs. [DSIR] NLL M.6019.
Order from OTS or SLA $1.10 62-25930

Trans. of Plasticheskie Massy (USSR) 1961, no. 9, p. 26-29.
An abstract trans. is available from OTS or SLA $1.10 as 62-13764, AID-61-149, 7 Nov 61, 3p.

DESCRIPTORS: *Heat resistant polymers, *Expanded plastics, Production, Pyrolysis, *Charcoal, Carbon black, Graphite, Volume, Electrical properties, Tensile properties, Dielectric properties, Stability, Decomposition, Deterioration.

The properties and uses of "foam cokes" are summarized.

Wood and Paper

THE INFLUENCE OF HIGH TEMPERATURES ON PAPER. [1962] 5p. 1 ref.
Order from SLA $1.10 62-16589

Trans. of Allgemeine Papier-Rundschau (West Germany) 1960, no. 10, p. 550-551.
Another trans. is available from SLA $1.10 as 61-20012, June 61, 2p.

DESCRIPTORS: *Paper, Mechanical properties, Tests, Temperature, Germany, Processing.

For abstract see Technical Translations 6: 776, 1961.

Chuenkov, V. S.
THE HYDROLYSIS AND WOOD PULP CHEMICAL INDUSTRIES IN THE NEW PERIOD OF DEVELOPMENT OF OUR COUNTRY. 16 Mar 62 [8]p.
JPRS: 13101.
Order from OTS or SLA $1.10 62-23601

Trans. of Gidroliznaya i Lesokhimicheskaya Promyshlennost' (USSR) 1961 [v. 14] no. 7, p. 1-3.

DESCRIPTORS: *Wood pulp, Hydrolysis, *Chemical industry, Production, Cellulose chemistry, Paper, Carbohydrates, Furfurals, Industrial research.

Corte, Heinz.
A CONTRIBUTION TO POROSITY ANALYSIS PRESENTED BY MEANS OF A STUDY OF CIGARETTE FILTERS. [1962] 21p.
Order from K-H $26.25 K-H 3769-a

Trans. of das Papier (West Germany) 1955, v. 9, no. 13/14, p. 290-295.

DESCRIPTORS: *Porosity, *Cigarettes, *Porous filters, Paper.

Ilinskaya, A. A.
THE INFLUENCE OF KRAFT LIQUOR SULFIDITY ON THE PROPERTIES OF PULP FOR CONDENSER PAPER, PT. II. [1962] [9]p. 20 refs.
Order from OTS or SLA $1.10 62-16193

Trans. of Bumazh[naya] Prom[yshlennost'] (USSR) 1959, v. 34, no. 3, p. 2-5.

DESCRIPTORS: *Black liquor, *Paper, Cellulose, *Thermal stresses, Sulfides, Copper compounds, Ammonium radicals, *Wood pulp, Production.

Of the methods studied for the evaluation of the thermal stability of cellulose as a high polymer, the clearest indication is given by the determination of viscosity in cuprammonium solution. This method is well suited for the purpose, because it gives a direct indication concerning the most important change in cellulose: the breaking of cellulose macromolecules. The pulp which degrades the least during heat treatment was cooked with the highest liquor sulfidity. This is proved by the fact that pulp prepared with high sulfidity kraft liquor regularly showed the highest viscosity. After heat treatment, according to the first method used the viscosities were: for alkaline pulp 114; for sulfate pulp 281, 474, 593, 735 and 883 with increasing sulfidity. Alkaline pulp was found to give the highest increase in copper number after heat treatment. The pH of water extracted from the pulp increases during heating independently of the sulfidity of the cooking liquor. (Author)

Ruck, R. and Ruck, H.
ELECTRON MICROSCOPIC INVESTIGATION OF GROUNDWOOD PINES, I. May 61, 11p. (12 figs. omitted) 57 refs.
Order from SLA $1.60 61-20195

Trans. of das Papier (West Germany) 1960, v. 14, no. 9, p. 399-[410].

DESCRIPTORS: *Electron microscopy, *Pine, *Wood pulp, Lignin, *Ultraviolet optical material, Density.

Werr, Friedrich.
DETERMINATION OF THE GREASE RESISTANCE OF PAPERS. II. COMPARISON OF METHODS FOR DETERMINING THE GREASE RESISTANCE [Die Bestimmung der Fettdichtigkeit von Papier. II. Vergleich der Verfahren zur Bestimmung der Fettdichtigkeit]. [1962] 13p.
Order from SLA $1.60 62-16494

Trans. of das Papier (West Germany) 1961, v. 15, no. 7, p. 318-322.
Other translations are available from SLA $1.60 as 62-10398, Oct 61, 12p.; $1.60 as 62-14904 [1962] 11p.; $1.60 as 62-16708 (includes German text) [1962] [16]p.

DESCRIPTORS: *Paper, Greases, Resistance, Determination.

See also 62-10349, 62-16069

MATHEMATICS

Akhiezer, N. I.
ON SOME COUPLED INTEGRAL EQUATIONS
[O Nekotorykh Sparennykh Integral'nykh Uravnenii].
[1961] [7]p. 4 refs. MDF A 103.
Order from OTS or SLA $1.10 62-25864

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 98, no. 3, p. 333-336.

DESCRIPTORS: *Integral equations, Theory, Bessel functions, Complex numbers.

Anan'eva, G. V. and Balaganskii, V. I.
ON OSCILLATION OF SOLUTIONS OF SOME DIFFERENTIAL EQUATIONS OF HIGHER ORDER
(O Koleblemosti Reshenii Nekotorykh Differentsial'nykh Uravenii Vysshego Poryadka) tr. by M. E. [1962]
7p. 1 ref. H-6044.
Order from OTS $0.50 62-11701

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1959, v. 14, no. 1(85), p. 135-140.

DESCRIPTORS: *Differential equations, Solutions, Inequalities.

Diveev, R. Kh.
SUBSTANTIALLY COMPLETE CLASS OF DECISION FUNCTIONS TO DETERMINE THE PROBABILITY OF STATES. [1960] 10p. 2 refs. MDF D-139.
Order from OTS $0.50 62-11186

Trans. of A[kademiya] N[auk] Uzb[ekskoi] SSR [Tashkent]. Izv[estiya]. Ser[iya] Fiz[iko]-mate[maticheskikh Nauk] 1959, no. 1, p. 45-53.

DESCRIPTORS: *Probability, Determination, *Functions, *Statistical analysis, Theory.

Eskin, L. D.
ON THE THEORY OF RELATIVISTIC SPHERICAL FUNCTIONS. [1960] 3p. 6 refs. MDF E-108
[AFCRL-TN-60-985] AD-244 925.
Order from OTS $0.50 62-11259

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-Matem[aticheskie] Nauk[i] (USSR) 1959, no. 2, p. 95-97.

DESCRIPTORS: *Functions, Theory, *Groups (Mathematics)

Recurrence relations between the matrix elements of irreducible representations of Lorentz groups and a number of resulting consequences are established. These relations permit the matrix T_g of the representation to be found in the case of representations of class I ($k_0 = 0$). (Author)

Kuratowski, K.
INTRODUCTION TO CALCULUS, tr. by J. Musielak. Vol. 17 of International Series of Monographs on Pure and Applied Mathematics. 1962, 315p.
Order from Addison-Wesley Publishing Co., Inc., Reading, Mass.

Trans. of unidentified Polish mono., n.p., 1961.

DESCRIPTORS: *Calculus, *Mathematics, *Textbooks, Sequences, Series, Functions, Integrals, Differential equations.

Parasyuk, O. and Trokhimchuk, Yu.
MATHEMATICS; A POWERFUL TOOL FOR KNOWLEDGE. 2 July 62 [7]p. JPRS: 14331.
Order from OTS or SLA $1.10 62-25612

Trans. of Nauka i Zhyttya (USSR) 1962 [v. 12] no. 2, p. 12-13.

DESCRIPTORS: *Mathematics, *Applied mathematics, *Cybernetics, Topology, Complex variables, Algebra, Functions.

Remez, E. Ya.
GENERAL COMPUTATIONAL METHODS OF CHEBYSHEV APPROXIMATION: THE PROBLEMS WITH LINEAR REAL PARAMETERS May 62, 2v. 128 refs.
Order from OTS $7.50/Set AEC-tr-4491
(Bks. 1-2)

Trans. of mono. Obshchie Vychislitel'nye Metody Chebyshevskogo Priblizheniya. Zadachi s Lineino Vkhodyashchimi Veshchestvennymi Parametrami, Kiev, 1957.

DESCRIPTORS: *Numerical analysis, *Numerical methods and procedures, *Polynomials, *Real variables, Equations, Convex sets, Complex variables, Fourier analysis, Analytic geometry, Geometry, Algebra, Inequalities.

Contents:
One-dimensional problem of Chebyshev approximation by means of ordinary polynomials, and its direct generalization
Systems of incompatible linear equations (in the usual and generalized sense) and the general problem of the least deviation from zero for a function that depends linearly on a finite number of parameters
Certain cases of the Chebyshev problem, solved without successive computational approximation
Certain approximation methods and procedures connected with Chebyshev problems
The $\mathfrak{A}$-algorithm of successive weighted quadratic approximations, and possible different applications of the algorithm
The method of successive equalizing descents
The method of prevailing deviations
Appendix 1: Convex sets in Euclidean n-dimensional space
Appendix 2: On the solution of systems of linear inequalities

Segre, Beniamino.
CONCERNING THE NUMBER OF ZEROS OF A POLYNOMIAL IN THE REAL FIELD, I. (Intorno al Numero degli Zeri di un Polinomio nel Campo Reale. I.). [1962] 9p.
Order from SLA $1.10 62-14844

Trans. of Accad[emie] Naz[ionale dei] Lincei. Classe [di] Sci[enze] Fiz[iche] Mat[ematiche e] Nat[urali]. Rend[iconti] (Italy) 1960 [ser. 8] v. 29, p. 155-161.

DESCRIPTORS: *Polynomials, Real variables, Determinants

See also 62-14854

Segre, Beniamino.
CONCERNING THE NUMBER OF ZEROS OF A POLYNOMIAL IN THE REAL FIELD, II. (Intorno al Numero degli Zeri di un Polinomio nel Campo Reale. II.). [1962] 8p. 1 ref.
Order from SLA $1.10 62-14853

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe [di] Sci[enze] Fiz[iche] Mat[ematiche e] Nat[urali]. Rend[iconti] (Italy) 1960 [ser. 8] v. 29, p. 225-231.

DESCRIPTORS: *Polynomials, Real variables, Taylor's series, Series, Determinants.

See also 62-14844

Segre, Beniamino
CONCERNING THE NUMBER OF ZEROS OF A POLYNOMIAL IN THE REAL FIELD, III. (Intorno al Numero degli Zeri di un Polinomio nel Campo Reale. III). [1962] 10p. 2 refs.
Order from SLA $1.10 62-14854

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe [di] Sci[enze] Fiz[iche] Mat[ematiche e] Nat[urali]. Rend[iconti] (Italy) 1960 [ser. 8] v. 29, p. 465-471.

DESCRIPTORS: *Polynomials, Real variables, Determinants, Algebraic topology, Topology, Groups (Mathematics)

See also 62-14853

Computing Devices

Belyakin, N. V.
THE UNIVERSALITY OF A CALCULATING MACHINE WITH POTENTIALLY INFINITE EXTERNAL MEMORY. Foreign Developments in Machine Translation and Information Processing no. 71. 19 Jan 62 [32]p. 3 refs. JPRS: 12050.
Order from OTS or SLA $3.60 62-15455

Trans. of mono. Problemy Kibernetiki (Problems of Cybernetics) Moscow, 1961, sect. 2, p. 77-86.

DESCRIPTORS: *Digital computers, Computers, Design, Memory devices, Magnetic tape, Programming, Sequences

It is shown how to realize on the machine a calculation of any recursive function. This proves the universality of the machine. Moreover, instead of working out a functional layout of Turing's machine a program is constructed, as is done in modern calculating machines. (Author)

Glushkov, V. M.
SELF-ORGANIZING SYSTEMS AND THE ABSTRACT THEORY OF COMPUTERS. Foreign Developments in Machine Translation and Information Processing no. 104. 27 July 62, 16p. 2 refs. JPRS: 14624.
Order from OTS $0.50 62-11716

Trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1962, v. 2, no. 3, p. 459-466.

DESCRIPTORS: *Data processing systems, *Digital computers, Computers, Theory, Operation, Training, Computer logic, Sequences

The aim is to show that, in spite of the limitations, it is possible to construct a sufficiently inclusive theory of self-organizing systems within the framework of abstract computer theory. (Author)

Lazarev, V. G. and Piyl', E. I.
REDUCING THE NUMBER OF STATES OF A CLASS OF SEQUENTIAL MACHINES. Foreign Developments in Machine Translation and Information Processing no. 100. 21 June 62 [10]p. 6 refs. JPRS: 14195.
Order from OTS or SLA $1.10 62-25485

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 5, p. 1064-1066.

DESCRIPTORS: *Electric machines, Machines, *Sequences, Synthesis, Special functions, Machine translation, *Digital computers, Computers.

Sobel'man, V. I. and Shura-Bura, M. R.
IMPLEMENTATION OF RECURSIVE PROCEDURES IN THE ALGOL-60 LANGUAGE. Foreign Developments in Machine Translation and Information Processing no. 99. 19 June 62 [32]p. 2 refs. JPRS: 14164.
Order from OTS or SLA $3.60 62-25508

Trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1962, v. 2, no. 2, p. 303-316.

DESCRIPTORS: *Digital computers, Computers, *Programming, *Language, Machine translation.

A method of implementing recursive procedures is proposed, which eliminates duplication and adjustment of the programs for computing actual parameters.

SOVIET ABSTRACTS: MECHANICS, 1960, NO. 10, ABSTRACTS 12581-14015. [1962] [112]p.
Order from OTS or SLA $9.60 62-25118

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1960, no. 10.

DESCRIPTORS: *Mechanics, Abstracting, Periodicals, *Fluid mechanics, *Elasticity, *Plasticity, Aerodynamics, Hydrodynamics, Hydraulic systems, Space flight, Motion, Magnetohydrodynamics, Aircraft, Ships, Cavitation, Liquids, Gases, Soils, Plastics, Polymers.

Barenblatt, G. I., Salganik, R. L., and Cherepanov, G. P.
ON THE NON-STEADY PROPAGATION OF CRACKS (O Neustanovivshemsya Rasprostranenii Treshchin) tr. by A. Pingell. 26 June 62, 11p. 9 refs.
NRL Trans. no. 898
Order from OTS $0.50 62-11717

Trans. of #Prikladnaya Matematika i Mekhanika (USSR) 1962, v. 26, no. 2, p. 328-334.

DESCRIPTORS: *Fracture (Mechanics), Propagation, Stresses, Elasticity.

Under certain assumptions, the action of the cohesive forces is taken into account, and on the basis of this, an equation is derived, which determines the rate of propagation of the crack as a function of the magnitude of the applied stress. It was learned that for every material, there is a certain velocity minimum for a steady uniform crack propagation. Furthermore, the rate of steady propagation of a crack increases with a growing tensile stress, striving toward that of Rayleigh type; it seems that in isotropic bodies, the state of a uniform expansion of a crack with a Rayleigh type velocity is not realized because there occurs a "branching" of the crack. (Author)

Brandenberger, H.
CONCERNING A NEW ELASTICITY THEORY OF THE DEFORMATION PROCESSES AND STRESSES OF SOLID SUBSTANCES (Uber eine neue Elastizitätstheorie der Deformationsvorgange und Spannungen Fester Körper). [1962] [48]p. (foreign text included) 7 refs.
Order from SLA $4.60 62-10929

Trans. of Schweizer Archiv für Angewandte Wissenschaft und Technik, 1941, v. 7, p. 223-235.

DESCRIPTORS: Solids, Stresses, *Deformation, *Elasticity, Theory, Plasticity, Equations.

Ivanov, P. A.
DETERMINING THE COEFFICIENT OF FRICTION BY THE HARDNESS DISTRIBUTION IN THE PLASTIC ZONE. Mar 62.
Order from BISI£1 10s BISI-2674

Trans. of Kuznechno-Shtampov[ochnoe Proizvodstvo] (USSR) 1961, v. 3 [no. 5] p. 10.

DESCRIPTORS: *Friction, Hardness, *Plasticity, Mathematical analysis.

Kolmogorov, A. N.
GENERAL THEORY OF DYNAMIC SYSTEMS AND CLASSICAL MECHANICS. [1962] 32p. 24 refs.
Order from SLA $3.60 62-14780

Trans. of mono. International Congress of Mathematicians [held at] Amsterdam, 2-9 Sep 54. [Proceedings] v. 1, Amsterdam, 1957, p. 315-333.

DESCRIPTORS: *Mechanics, Dynamics, Applied mechanics, *Measure theory, Applied mathematics, Mathematics

I have set myself the task of determining the modes of applying the fundamental concepts and the results of the contemporary metric and spectral theory of dynamic systems to the study of conservative dynamic systems of classical mechanics. (Author)

Shvets', I. T. and Dyban, E. P.
EFFECT OF INITIAL DISTURBANCES ON THE DEVELOPMENT OF TURBULENT STREAM CONDITIONS IN THE MOVEMENT OF AIR THROUGH TUBES. 28 Feb 62 [9]p. FTD-TT-61-68.
Order from OTS or SLA $1.10 62-23687

Unedited rough draft trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1960, no. 2, p. 173-176.

DESCRIPTORS: *Turbulent flow, Reynolds number, *Heat transfer, *Pipes, Mathematical analysis, Hydraulic systems, Air, Resistance, Fluid flow, Motion.

Data are cited indicating that in calculations of heat exchange and hydraulic resistance relative to short tubes, it is necessary for a criterion showing the intensity of turbulence of the stream to figure in the criterial correlations. The effect of artificial disturbance of the stream is most significant in the zone of transient condition. Initial disturbances dampen in relatively short segments, their length being a function of the initial disturbance level and Reynolds number. Initial disturbances, introduced into the stream, affect the magnitude of the coefficient of hydraulic resistance within the 2,000 to 5,000 range of Reynolds numbers; at greater values of Re in the case of a tube 80 diameters long, the effect of the initial disturbances is within the limits of measurements error.

Vlasov, V. Z.
SHALLOW SPHERICAL SHELLS [AND] MORE COMPLEX PROBLEMS OF SHALLOW SHELL THEORY. [1961] [97]p. MDF V 110.
Order from OTS or SLA $8.60 62-19894

Trans. of mono. [Obshchaya Teoriya Obolochek] Moscow/Leningrad, 1949, chaps. 9 and 10, p. 398-478.

DESCRIPTORS: *Elastic shells, *Spheres, *Beams, Structural shells, *Cylindrical bodies, Stability, Elasticity, Deformation, Stresses, Shear stresses, Deflection, Theory, Differential equations, Series, Bessel functions

MECHANICS

Aerodynamics and Pneumatics

Betz, A.
MAXIMUM LIFT OF ROTATING AEROFOILS
(Höchstauftrieb von Flügeln an Umlaufenden Rädern).
[1962] [11]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-10921

Trans. of Z[eitschrift für] Flugwissenschaften (West Germany) 1961, v. 9, no. 4/5, p. 97-99.

DESCRIPTORS: *Airfoils, Rotation, *Lift, Pressure, Boundary layer, Aerodynamics.

Rules of similarity can be deduced from observations of the significant effects in the boundary layer of a rotating blade. It is thus possible to apply the experimental results obtained by Himmelskamp regarding the maximum lift of rotating blades to geometrically similar arrangements. (Author)

Sidorov, O. P.
CALCULATION OF THE FLOW ABOUT A CONE
[K Raschetu Obtekaniya Konisa] tr. by B. W. Kuvshinoff. 22 June 62, 4p. 1 ref. APL/JHU TG 230-T303.
Order from OTS $0.50 62-11708

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1959, no. 2, p. 144-146
A [rough draft] trans is available on loan from SLA as 62-14014 [1961] [9]p.

DESCRIPTORS: *Conical bodies, Hypersonics, *Hypersonic flow, Velocity, Numerical analysis, Differential equations

For abstract see Technical Translations 7: 443-444, 1962.

Stanyukovich, K. P.
SIMILARITY TYPE RELATIVISTIC MOTIONS IN A CASE OF POINT SYMMETRY. 23 Feb 62 [9]p.
6 refs. JPRS: 12787.
Order from OTS or SLA $1.10 62-23416

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 1, p. 77-80.

DESCRIPTORS: Gas flow, *Adiabatic gas flow, Equations of motion, Motion.

All possible similarity type relativistic gas movements which possess point symmetry were examined. The relationships obtained can be used in the theory of propagation of ultrarelativistic waves and, in a particular case, of shock waves.

Hydrodynamics, Hydraulics, and Hydrostatics

Braginskii, S. I.
ON A CRITERION OF THE APPLICABILITY OF THE MAGNETOHYDRODYNAMIC EQUATIONS TO A PLASMA. [1960] 4p. 5 refs. MDF B-164 [AFCRL] TN 60-771.
Order from OTS $0.50 62-11251

Trans. of mono. Vopr[osy] Magnitoi Gidrodin[amiki] i Dinamiki Plazmy, Riga, 1959, p. 67-71.

DESCRIPTORS: *Plasma physics, Mathematical analysis, *Magnetohydrodynamics, *Hydrodynamics

Dobroklonskii, S. V. and Tyumeneva, V. A.
ON THE EXTINCTION OF CAPILLARY-GRAVITATION WAVES ON SURFACE OF WATER COVERED BY FILMS OF CERTAIN SURFACE-ACTIVE SUBSTANCES AS A FUNCTION OF FREQUENCY. [1961] 17p. 6 refs. MDF D-149.
Order from OTS $0.50 62-11190

Trans. of A[kademiya] N[auk] SSSR. Izv[estiya]. [Seriya] Geogr[aficheskaya] i Geof[izicheskaya] 1950, v. 14, no. 5, p. 425-439.

DESCRIPTORS: *Water, *Surface properties, Gravity, *Water waves, *Attenuation

The attenuation with distance of capillary-gravitation waves emitted continuously by a point source on the surface of water covered with films of certain surface active substances was measured at 15- and 60-cps frequencies. The results of the experiments were compared with the effect calculated theoretically, which should yield: (a) the intrinsic viscosity of water whose surface is completely clean; (b) the irreversible processes in the surface film related to the continuous transition of the molecules of the extinguishing substance from layer to layer (according to the Ivanov-Shuleikin theory); (c) the "rigid boundary" on the surface of the waves which, according to the Levich-Lamb hypothesis, must magnify the losses by viscous friction, in the watery medium itself as compared with a "free" wave. It was found that both the intrinsic viscosity of water with a "free" wave and the increased losses by viscous friction, which occur according to the Levich-Lamb hypothesis, are inadequate to the extinction of waves under natural conditions. In conformance with the Ivanov-Shuleikin theory, the fundamental extinguishing effect of surface-active oil films is caused by the irreversible processes in these films. (Author)

Ogibalov, P. M.
TESTS OF THICK-WALLED PIPES DURING SHORT-DURATION, HIGH INTERNAL PRESSURES
(Ispytaniya Tolstostennykh Trub pri Kratkovrenrennykh Vysokikh Vnutrennikh Davleniyakh). 4 Apr 62, 9p. 3 refs. I-0962; JPRS (R-2215-D).
Order from OTS $0.50 62-11694

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1958 [no. 9] p. 134-139.

DESCRIPTORS: *High pressure research, Hydraulics, *Pipes, Deformation, Pressure.

Multiple, repeated pressure loads on thick-walled pipes which at first application cause an initial residual deformation on the external surface, not exceeding 0.1-0.2%, later on, as a rule, do not bring about an increase in residual deformation, as self-friction [?] takes place. A small number (10-15) of repeated loads on thick-walled pipe samples, with pressure exceeding by 20-25% the pressure which caused the initial residual deformation of 0.4-0.6% on the external surface, as a rule end in rupture. (Author)

METALLURGY

THE KACHKANAR DEVELOPMENT PROJECT (IN THE CENTRAL URALS, USSR): [GENERAL INFORMATION] 1956-59. 11 Feb 60 [32]p. (5 figs. omitted) 10 refs.
AF 1419454.
Order from OTS or SLA $3.60 61-28340

DESCRIPTORS: Geology, Mining engineering, Geological survey, *Titanium, *Magnetite, Ores, Deposits, *Vanadium, Recovery, *Iron, *Steel, Production, Magnetic separation.

Contents:
Introduction
Kachkanar group of titanomagnetite deposits
Kachkanar mining and concentrating kombinat
The future city of Kachkanar.

Dusman, V. A.
AUTOMATION AND MECHANIZATION OF HEAT TREATMENT OF SMALL PARTS. Apr 62.
Order from HB $2.75 HB-5393

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 5, p. 7-10.

DESCRIPTORS: *Furnaces, *Heat treatment, *Automation, Design, Manufacturing methods.

Eichenauer, Walter, Hattenbach, Karl, and Pebler, Alfred.
THE SOLUBILITY OF HYDROGEN IN SOLID AND MOLTEN ALUMINIUM (Die Löslichkeit von Wasserstoff in Festem und Flüssigem Aluminium). [1962] [18]p. (foreign text included) 12 refs.
Order from SLA $1.60 62-16175

Trans. of Zeitschrift für Metallkunde (West Germany) 1961, v. 52, no. 10, p. 682-684.

DESCRIPTORS: *Aluminum, Melting, Liquid metals, Solids, *Hydrogen, Solubility.

The hydrogen absorption of pure aluminium between 360°C and 1050°C has been calculated from the temporal process of degassing. The following relation stands for solid aluminium: $\log l = 0.521 - (3042/T) + 1/2 \log p$ (l in cm^3 NTP/100g, p in Torr, T in $^\circ$K). The corresponding formula for liquid aluminium is: $\log l = 1.529 - (3086/T) + 1/2 \log p$. The square root law is satisfied within the limit of error in the solid and in the liquid state. Diffusion in the metal is responsible for the hydrogen-degassing-rate of the solid aluminium. The diffusion coefficient is $D = 0.11 \cdot \exp(-9780/RT)$ cm^2/s. A reaction of first order, atomic hydrogen being present, is responsible for the degassing-rate in the liquid state. (Author)

Gruber, Helmut and Scheidig, Helmut.
THE MELTING OF TITANIUM AND ZIRCONIUM IN A VACUUM ARC FURNACE. [1962] [35]p. 11 refs.
Order from SLA $3.60 62-14463
Original copy poor quality; available on loan also

Trans. of Zeitschrift für Metallkunde (West Germany) 1956, v. 47, no. 3, p. 149-159.

DESCRIPTORS: *Titanium, *Zirconium, Melting, Electric furnaces.

Hummitzsch, W.
TEMPERATURE MATERIAL TRANSFER AND PHYSICAL PROPERTIES OF SLAGS OF UNALLOYED WELDING ELECTRODES. Apr 62.
Order from BISI 4 15s BISI-2617

Trans. of Schweissen und Schneiden (West Germany) 1961, v. 13, May, p. 187-195.

DESCRIPTORS: *Welding, Welding rods, *Electrodes, *Slags, Temperature, Viscosity, Conductivity.

Jacquet, A. and Mencarelli, E.
TECHNIQUE FOR NON-DESTRUCTIVE ELECTRON MICROGRAPHY AND MICROFRACTOGRAPHY: APPLICATIONS TO THE EXAMINATION OF MASSIVE PARTS. June 62.
Order from BISI £5 10s BISI-2634

Trans. of Revue de Métallurgie. Memoires Scientifiques (France) 1960, v. 57 [no. 4] p. 241-253.

DESCRIPTORS: *Electron microscopy, *Electrolytic polishing, Nitrocellulose, *Non-destructive testing.

Kreulitsch, H.
THE HEATING TIME OF SLAB INGOTS IN MODERN TWO-WAY SOAKING PITS. June 62.
Order from BISI £4 10s BISI-2714

Trans. of Stahl [und] Eisen (West Germany) 1962, v. 82 [no. 1] p. 18-23.

DESCRIPTORS: *Castings, Heating.

Manelis, R. M.
A METHOD OF JOINING 1Kh18N9T STAINLESS STEEL AND CERAMICS. 2 May 62 [4]p.
FTD-TT-62-294.
Order from OTS or SLA $1.10 62-25733

Unedited rough draft trans. of Soviet patent 135741 (670021/22) 14 June 60, 2p.

DESCRIPTORS: *Stainless steel, *Ceramic materials, Cermets, *Soldered joints, Carbonyl radicals, Iron compounds, Joints, Surfaces, Coatings, Powders, Bonding.

A thin coating of sintered iron carbonyl powder is first applied to the chemically and thermally treated surface of the steel; then the prepared surface is copper-joined to the cermet in the usual manner. Instead of copper, silver or silver solder can be used; in this case, a nickel coating is first applied to the prepared surface.

Mlinov, I. B.
ELECTROSLAG WELDING OF LARGE THICK-WALLED CONSTRUCTIONS. 13 Mar 62 [17]p.
FTD-TT-61-336.
Order from OTS or SLA $1.60 62-24032

Unedited rough draft trans. of mono. Elektroshlakovaya Svarka Bol'shikh Tolstostennykh Konstruktsii, Stalingrad, 1960, p. 17-31.

DESCRIPTORS: *Welding, Machines, Construction, Paper industry, Chemical industry, *Welded joints, Pressure vessels, Steel, Mechanical properties.

Discussions are presented on the welding of hollow thick walled sections with carbon and alloyed steels and on the technique for welding ringseams.

Petrov, G. A., Mikhailov, I. N., and Klyucharev, A. P.
AUTOMATIC CONTROL OF THERMAL PROCESSES IN OPEN HEARTH FURNACES. 25 Jan 62, 11p.
JPRS: 12132.
Order from OTS $0.50 62-11108

Trans. of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1960 [v. 14] no. 10, p. 20-23.

DESCRIPTORS: *Open hearth furnaces, Control, Automatic, Fuels, Combustion, Temperature.

A system [skhema] for the combined automatic regulation of the thermal processes of a 380-ton open hearth furnace was developed, assembled, and put into operation by the All-Union Scientific-Research Institute for Metallurgical Thermal Technology, the Institute of "Uralmstallurgavtomatika," and the Nizhne-Tagil' Metallurgical Combine. This furnace (as other furnaces of the combine) was lined with basic refractory materials; it processes scrap and ore into liquid pig iron (about 65%) and is heated by a mixed coke and blast furnace gas. In the melting and finishing periods, the gas is carburetted by coal tar. Oxygen is used as an intensifier. (Author)

Pugovkin, A. U.
NON-OXIDIZING HEATING OF SEMIPRODUCTS BY NAKED FLAME ACCOMPANIED BY BURNING UP OF PRODUCTS OF INCOMPLETE COMBUSTION IN THE WORKING AREA OF THE FURNACE. 1962.
Order from BISI 3 5s BISI-2656

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961, v. 3, no. 5 [p. 34-36].

DESCRIPTORS: *Furnaces, Waste gases, Heating, *Combustion.

Scheil, E., Schmidt, T., and Wünning, J.
DETERMINATION OF EQUILIBRIA BETWEEN $CO-CO_2$ MIXTURES AND γ-MIXED CRYSTAL, CEMENTITE AND GRAPHITE. Mar 62.
Order from BISI £5 10s BISI-2505

Trans. of Arch[iv für das] Eisenhüt[tenwesen] (West Germany) 1961, v. 32, Apr, p. 251-260.

DESCRIPTORS: *Metallic crystals, *Iron compounds, Carbides, *Graphite, Pearlite, *Chemical equilibrium, *Carbon dioxide, Monoxides.

Schenck, Hermann and Spieker, Walter.
THE DISTRIBUTION OF COPPER AND TIN BETWEEN MOLTEN IRON AND LEAD AND THE EFFECT OF OTHER ELEMENTS ON IT. [1960] [23]p. 20 refs.
Order from SLA $2.60 62-14198

Trans. of Archiv f[ür] d[as] Eisenhüttenwesen (West Germany) 1959, v. 30, no. 11, p. 641-648.

DESCRIPTORS: *Copper, *Tin, Separation, *Iron, *Lead, Activity coefficient, Liquid metals, Distribution, Alloys, Temperature.

The requirements for the removal of copper and tin from liquid iron are discussed. The equilibrium relations, with the assistance of the characteristic distribution figures L_{Cu} and L_{Sn} and their alteration by additional elements, permitted the coefficients of activity and action of iron solutions containing two or more components to be calculated. Knowledge of the activity of copper in liquid iron alloys shows the limitations and possibilities for removing copper from iron solutions by a vacuum treatment. A further result of the investigations was that the carbon saturation contents for various elements were obtained. Along with the effect of temperature, the coefficients of activity and action show that pig iron and not steel should be subjected to the washing treatment. The report details the essentials for economic and efficient conduct of the washing process. (Author)

Septier, L., Venard, P., and Rajon, C.
EXPERIMENTAL USE OF NATURAL GAS FOR FIRING OPEN-HEARTH FURNACES. [1962] [28]p. (13 figs. refs. omitted).
Order from SLA $2.60 62-14223

Trans. of Revue de Metallurgie (France) 1961, v. 58, no. 10, p. 807-821.

DESCRIPTORS: *Open hearth furnaces, *Natural gas, Methanes, Combustion, Steel industry

Türk, R.
MODEL EXPERIMENTS TO DETERMINE FLOW CONDITIONS IN REGENERATIVE CHAMBERS AND DEDUCTIONS TO BE DRAWN FROM THE RESULTS AS TO OPTIMAL DIMENSIONS. Mar 62.
Order from BISI £8 BISI-2587

Trans. of Radex-Rund[schau] (Austria) 1961, no. 6, p. 802-809.

DESCRIPTORS: *Furnaces, Fluid flow, *Model tests, Liquid metals.

Vorontsov, N. M.
WEAR TESTS ON THE MATERIAL OF ROLLING-MILLSROLLS. July 62.
Order from BISI £4 BISI-2531

Trans. of mono. Mezhvuz[ovskaya] Nauch[no]-Tekh[nicheskaya] Konf[erentsiya] na Temu: (Sovremennye Dostizheniya Prokatnogo Proizvodstva [Leningrad, 1958]. Trudy, v. 2) Leningrad, 1959, p. 367-372.

DESCRIPTORS: *Rolling mills, *Steel, *Friction, Test methods.

Zabolotskii, V. M., Kalugin, B. A. and others.
AN ULTRASONIC FLAW DETECTOR FOR TESTING WELDED METAL SAMPLES. 14 May 62 [5]p.
FTD-TT-62-368.
Order from OTS or SLA $1.10 62-25742

Unedited rough draft trans. of Soviet patent 139470 (665329/25) 3 May 60.

DESCRIPTORS: *Metals, *Welding, Fracture (Mechanics) Test methods, Non-destructive testing, *Ultrasonics.

An ultrasonic flaw detector is used in a machine for testing welded metal samples for their tendency to form hot cracks to record the moment that the cracks occur during the test process. (Author)

Zeerleder, A. von.
THE DEVELOPMENT OF ALUMINIUM SPOT-WELDING. [1960] 8p. (refs. 25 figs. 2 tables omitted).
Order from SLA $1.10 60-18964

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1944 [v. 10, no. 7] p. 218-226.

DESCRIPTORS: *Spot welding, *Aluminum, Aluminum alloys, Spot welds.

Ferrous Metals

Bastien, P.
CLAD STAINLESS STEEL PLATES. July 62.
Order from BISI £5 10s BISI-2830

Trans. of Revue de Métallurgie (France) 1961, v. 58 [no. 12] p. 1039-1048.

DESCRIPTORS: *Stainless steel, *Metal plates, Metals, Manufacturing methods.

Bohmer, S.
THE INFLUENCE OF PICKLING HYDROGEN ON THE PROPERTIES OF SILICON ALLOY STEEL SHEET. July 62.
Order from BISI £3 15s BISI-2746

Trans. of Neue Hütte (East Germany) 1961, v. 6 [no. 1] p. 56-60.

DESCRIPTORS: *Steel, Sheets, Silicon alloys, *Hydrogen, *Pickling.

Ferrero, M., Timo, G., and Creton, F.
X-RAY CRYSTALLOGRAPHIC STUDY OF NON-METALLIC INCLUSIONS IN STEELS AND RESEARCH INTO THEIR ORIGINS. July 62.
Order from BISI £2 BISI-2784

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1962, v. 59 [no. 1] p. 75-78.

DESCRIPTORS: *Steel, Impurities, Crystallization, X-ray diffraction analysis.

Grimm, R.
THE RECRYSTALLISATION OF COMMERCIAL GRADE DEEP-DRAWN STRIP AS A FUNCTION OF THE DEGREE OF DEFORMATION AND ANNEALING TEMPERATURE. July 62.
Order from BISI 9 10s BISI-2749

Trans. of Bänder, Bleche, Rohre (West Germany) 1962, Feb, p. 49-61.

DESCRIPTORS: *Steel, *Metallic crystals, Deformation, Annealing.

Josefsson, Ake and Backström, Börje.
TESTING CAST IRON FOR STEEL PLANT CHILL MOLDS WITH RESPECT TO TENDENCY TOWARDS CRAZING (Provning av Gjutjärn för Stalverkskokiller i Avseende pa Benägenhet för Nätighet). [1962] [36]p. (foreign text included) 12 refs.
Order from SLA $3.60 62-14501

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1960, v. 144, no. 10, p. 739-756.

DESCRIPTORS: *Cast iron, *Molding, *Fracture (Mechanics), Steel industry, Surfaces, Microstructure, Test methods.

A testing procedure is described in which sample bodies of cast iron are exposed on their plane end surface with a diameter of 80 mm to rapid heating to external temperatures of 850-900 deg C, followed by accelerated cooling. The test aims to resemble the conditions in steel plant chill molds in use. Crazing is produced by the treatment. The decisive material factor seems to be the surface structure of the cast test body. Where this deviated appreciably from the structure on the interior with respect to graphite content and graphite scale size, the crazing became more pronounced than when the surface portion had the same structure as the interior. The crazing tendency furthermore decreases clearly with increased Si-content. The procedure seems to make possible a classification of cast iron material with respect to the tendency to crazing. (Author)

Odone, G. and Berruti, V.
CONTRIBUTION TO THE KNOWLEDGE OF THE PHENOMENA PRODUCED DURING THE ANNEALING OF COLD ROLLED MILD STEEL FOR DEEP-DRAWING. July 62.
Order from BISI £6 10s BISI-2719

Trans. of Revue de Métallurgie (France) 1961, v. 58 [no. 2] p, 165-176.

DESCRIPTORS: *Steel, Annealing, Drawing (Machine processing).

Rahmel, A.
CONTRIBUTION TO THE SCALING BEHAVIOUR OF BOILER STEELS. July 62.
Order from BISI £7 10s BISI-2692

Trans. of Vereinigung der Grosskesselbesitzer. Mitteilungen (West Germany) 1961, Oct, p. 319-332.

DESCRIPTORS: *Steel, Boilers, Scale.

Schenck, H. and Domalski, H.-H.
INVESTIGATIONS OF THE DISTILLATION OF METALLIC ELEMENTS FROM LIQUID IRON UNDER REDUCED PRESSURE. June 62.
Order from BISI £5 15s BISI-2597

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 11] p. 753-760.
Another trans. is available from ATS $23.45 as ATS-55P59G [1962] 17p.

DESCRIPTORS: *Iron, Metals, *Distilling plants, Manganese alloys, Copper alloys, Tin alloys, Carbon alloys, Evaporation, Pressure.

Schöberl, A. and Mitsche, R.
THE EFFECT OF SUPERHEATING OF THE MELT ON THE STRUCTURE AND THE STRENGTH CHARACTERISTICS OF ALLOY STRUCTURAL STEEL. July 62.
Order from BISI £6 10s BISI-2688

Trans. of Stahl und Eisen (Germany) 1938, v. 58, p. 546-549.

DESCRIPTORS: *Steel, Alloys, Mechanical properties, Microstructure, Melting, High temperature research.

Siegenthaler, H.
WELDING OF 18/8 CrNi AND 18/8 CrNiMo TUBE STEELS. July 62.
Order from BISI £4 5s BISI-2697

Trans. of Zeitschrift für Schweisstechnik (Switzerland) 1961, v. 51, no. 11, p. 371-384.

DESCRIPTORS: *Steel, *Steel tubing, Chromium alloys, Nickel alloys, Molybdenum alloys, *Welding.

Sokolkov, E. N., Lozinskii, M. G., and Antipova, E. I.
GRAIN-BOUNDARY STRUCTURE AND CREEP CHARACTERISTICS OF AN AUSTENITIC STEEL [Struktura Granits Zeren i Zharoprochnost' Austenitnoi Stali]. Feb 62, 2300 words.
Order from HB $4.80 HB-4428

Trans. of Metallovedenie i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 11, p. 19-25.
Another trans. is available from OTS or SLA $1.10 as 61-23383, CE Trans-1702, DSIR NLL M. 2947 [1961] [10]p.

DESCRIPTORS: *Steel, Grains (Metallurgy), Microstructure, Temperature, Deformation, Plastic flow, *Austenite.

For abstract see Technical Translations 7: 104, 1962.

Nonferrous (except light) Metals

Galli, G.
SURFACE TREATMENT OF ZINC ALLOY DIE CASTINGS (ZAMA) (COPPER OR BRONZE-NICKEL-CHROMIUM). [1962] 9p.
Order from ATS $12.50 ATS-29P61I

Trans. of Galvanotecnica (Italy) 1958, v. 9, p. 301-308.

DESCRIPTORS: Surfaces, *Castings, *Zinc alloys, Copper alloys, Bronze, Nickel alloys, Chromium alloys, *Dies.

Wrzeciono, A.
THE DISTILLATION AND SUBLIMATION OF MANGANESE. [1962] 8p.
Order from ATS $12.50 ATS-01P61P

Trans. of Postepy Fiz[yki] (Poland) 1961, v. 12, no. 1, p. 89-97.

DESCRIPTORS: *Manganese, Distilling plants, Sublimation.

Structural Metallurgy and Corrosion

Epel'baum, V. A., Sevast'yanov, N.G. and others.
ON PHASES WHICH ARE FORMED IN THE CHROMIUM-BORON SYSTEM IN THE REGION RICH IN BORON. [1960] 3p. 2 refs. MDF E-109.
Order from OTS $0.50 62-11258

Trans. of Zh[urnal] Strukt[urnoi] Khim[ii] (USSR) 1960, v. 1, no. 1, p. 64-65.

DESCRIPTORS: *Boron alloys, *Chromium alloys, Phase studies, Intermetallic compounds, Borides.

The presence of a new, previously unknown, phase corresponding to the compound CrB_6 is established in the chromium-boron system. The periods of the cells of this phase (tetragonal symmetry) are determined: $a = 5.458$ kX; $c = 7.138$ kX; $Z = 4CrB_6$. (Author)

Erlikh, L. B.
ON THE NATURE OF THE ROUGHNESS OF A POLYCRYSTAL. [1959] 4p. 2 refs. MDF E-105.
Order from OTS $0.50 62-11267

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Metal[lurgiya] i Topl[ivo] 1959, no. 3, p. 134-135.

DESCRIPTORS: *Metals, Surface properties, Temperature, Crystal structure.

The roughness observed on a polished surface under certain conditions of sample heating is the result of loss of stability in a thin surface layer under the effect of compressive stresses resulting from non-uniform heating.

Gerasimov, V. V. and Gromova, A. I.
INVESTIGATION OF THE CORROSIVE AND ELECTROCHEMICAL BEHAVIOR OF 12 x M STEEL IN WATER AT A HIGH TEMPERATURE, tr. by Marcel I. Weinreich. 4 Aug 61 [24]p. 13 refs.
Order from OTS or SLA $2.60 SCL-T-376

Trans. of mono. Issledovanie Korrozionnogo i Elektrokhimicheskogo Povedeniya Stali 12 x M v Vode pri Vysokoi Temperature, Moscow, 1960 [15]p.

DESCRIPTORS: *Steel *Corrosion, Water, Temperature, Electrochemistry, Hydrazines, Nuclear power plants.

The tests were carried out with samples of the steel 12 X M (C - 0.12%; Si - 0.3%; Mn - 0.59%; P - 0.29%; Cr - 0.94%; Mo - 0.40%), having surface purity of 7 The corrosive resistance of the 12 X M steel was determined in a distillate that had been saturated with oxygen, air, hydrogen, and with an admixture of hydrazine, at a temperature of 330°C and a pressure of 130 kg/cm^2. The kinetics of electrode processes were investigated at 300°C and a pressure of 87 kg/cm^2, in water saturated with air and hydrogen, as well as in water containing an admixture of hydrazine. The corrosion of the steel had an electro-chemical nature. The rate or velocity of the cathode process was determined by a diffusion of the oxygen to the surface of the metal. The rate of dissolution of the steel as a function of the potential in the various media (water saturated with hydrogen, air, and with an addition of hydrazine) is expressed by one anodic polarization curve. Augmentation of the oxygen concentration in water was accompanied by an increase of the steel corrosion. The corrosion of the specimens tested in distilled water saturated with hydrogen and containing hydrazine, was uniform and even, whereas in water saturated with oxygen and air the corrosion had a pitted appearance. The corrosion rate diminishes with time. The equation describing the dependence of the corrosion velocity on the lapse of time (in samples tested with water and some hydrazine), can be written as $\log \mathrm{kg/m^2 days} \simeq 1.35 - 0.74 \log T$ hour.

Gruhl, W. and Kramer, H.
ON THE NATURE OF DISCONTINUOUS PRECIPITATION. [1962] [20]p. 15 refs.
Order from SLA $1.60 62-10956

Trans. of Metall (West Germany) 1958, v. 12, no. 8, p. 707-713.

DESCRIPTORS: *Zinc alloys, *Copper alloys, *Silver alloys, *Precipitation, Microanalysis, Electron microscopy, Microstructure, Grains (Metallurgy)

The nature of discontinuous precipitation is discussed on the basis of micrographs and electron micrographs of zinc-copper and copper-silver. The interrelationships between continuous and discontinuous precipitation are discussed in the cases of zinc-copper and copper-beryllium. The results are evaluated on the basis of energy considerations. (Author)

Haasen, Peter and King, Alwyn.
WORK-HARDENING AND STACKING FAULT ENERGY OF COPPER-ALLOY CRYSTALS. [1961] 25p. 43 refs.
Order from SLA $2.60 61-20526

Trans. of Z[eitschrift für] Metallk[unde] (West Germany) 1960, v. 51, no. 12, p. 722-736.
Another trans. is available from ATS $36.00 as ATS-36N53G [1961] 25p.

DESCRIPTORS: *Copper alloys, *Crystals, Hardening, Energy.

Pritula, V. A.
BIOCORROSION OF UNDERGROUND PIPELINES. 12 Mar 62 [9]p. 6 refs. JPRS: 12981.
Order from OTS or SLA $1.10 62-23454

Trans. of Gazovaya Promyshlennost' (USSR) 1961 [v. 6] no. 8, p. 46-50.

DESCRIPTORS: *Corrosion, Underground structures, *Pipes, Bacteria, Decomposition, *Microorganisms, Microbiology.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ENGINEERING PHYSICS JOURNAL, 1961, VOL. 4, NO. 1: SELECTED ARTICLES. 18 Jan 62 [19]p. 7 refs. FTD-TT-61-110; AD-270 792.
Order from OTS or SLA $1.60 62-15830

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 1, p. 58-62 and 104-108.

DESCRIPTORS: *Ultrasonics, *Heat transfer, *Cylindrical bodies, *Liquids, Water, Convection, Acoustics, Wind, Quartz crystals, Thermocouples, Instrumentation, *Light water reactors, *Reactor fuels, *Helium, Temperature, Data, Analog computers, Mathematical analysis, Integral transforms, Feasibility studies.

Contents:
A study of the effect of ultrasonic waves on the heat exchange of bodies in liquids, by A. A. Zhukaukas and

others
Calculation of the temperatures in nuclear reactor fuel elements under transient conditions, by V. S. Ermakov and others.

REPROCESSING OF IRRADIATED FUELS. Quarterly rept. no. 5, Apr-June 61, on Contract [008-60-4RDB]. 28 July 61, 28p.
Order from OTS or SLA $2.60 EURAEC-134

Trans. of rept. from Centre d'Étude de l'Énergie Nucléaire (Belgium).

DESCRIPTORS: *Reactor fuels, *Chlorination, *Uranium compounds, *Oxides, *Chlorides, *Uranyl radicals, *Reaction kinetics, Transformations, Oxidation, *Fission products, Sintering, Particles, Fluorination, *Powder metallurgy, *Benzenes, Distilling plants, *Fluorides, Plutonium.

Research on chlorination was continued. The chlorination of the uranium oxide takes place in prototype pilot plants Practical quantitative results were obtained when trans- (Nuclear Physics and Nuclear Chemistry, TT, v. 8, forming UC in UF_4 and ceramets (UC and UO_2) in UO_3. The time required for oxidizing sintered UO_2 in U_3O_8 was appreciably reduced and the yields of UF_4 rose from 80 to 95%; a start was made with the research on the transformation of UF_4 in UF_6. The preliminary research stage on the operational characteristics of the distillation unit was terminated. The equipment of the Plutonium laboratory is well-nigh completed. (Author)

STUDIES ON LIQUID ENTRAINMENT. Feb 61, 52p. 15 refs.
Order from OTS $1.50 AEC-tr-4225

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1959, v. 1, no. 6, p. 363-369 and Kagaku Kogaku (Japan) 1958, v. 22, no. 11, p. 680-686; 1959, v. 23, no. 10, p. 647-654.

DESCRIPTORS: *Radioactive waste, Decontamination, Evaporation, *Evaporators, Towers (Chemistry)

Contents:
The liquid entrainment and its removal of large-scale evaporation unit; evaporation of radioactive liquid wastes, by Nobuo Mitsuishi and others
Studies on liquid entrainment; evaporation of radioactive liquid waste, by Nobuo Mitsuishi and others
On liquid entrainment and its removal; decontamination characteristics of evaporation unit, by Nobuno Mitsuishi and others

USE OF PLUTONIUM AS FUEL IN NUCLEAR REACTORS. Quarterly rept. no. 4, Apr-June 61, on contract 027-60-7 RDB. July 61, 63p.
Order from OTS or SLA $6.60 EURAEC-130

Trans. of rept. from Centre d'Étude de l'Énergie Nucléaire (Belgium).

DESCRIPTORS: *Nuclear power plants, *Reactor fuels, *Plutonium compounds, *Oxides, *Carbides, *Uranium compounds, Power alloys, Separation, Purification, Nuclear physics laboratories.

The first results of Pu oxalate solubility have been obtained. The investigation of the various factors affecting to PuO_2 dissolution speeds and the purification of Pu salts by ion exchangers was continued. Pu concentrations up to 10-5 g do not impede the fluorimetric determination of U. Dense grains produced were scattered in an iron matrix and swaged. Plutonium carbide was produced. A method was elaborated for the fabrication of rods, pellets, various parts, etc. formed by a UO_2 - C mixture. By vibrating UO_2 densities of the order of 83%. D.T. are attained. The behavior of carbide to swaging is comparable with that of UO_2. U-Mo alloy powders were produced. The study of the process for fabricating powders by atomization was started. Dilatometric results were obtained on PuO_2 and PuO_2-UO_2 mixtures. Diagram TTT of the Zr-Nb_{25} alloy is practically completed. The study of Zr-Nb alloy corrosion with 0 to 40% Nb contents have been started. Tensile, creeping and hardness tests were made on commercial materials and materials of high purity. (Author)

Bedreag, C. G.
THE 7s, 6d, AND 5f ENERGY LEVELS OF ELEMENTS 90 TO 100. 1960 [8]p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-3993

Trans. of Academia R[epublicii] P[opulare] R[omine]. Filiala Iasi. Studii si Cercetari Stiintifice. [Chimie] (Rumania) 1954, v. 5, no. 1/2, p. 87-94.

DESCRIPTORS: *Atomic energy levels, *Atomic orbitals, Thorium, Protactinium, Uranium, Neptunium, Plutonium, Americium, Curium, Berkelium, Californium, Einsteinium, Fermium.

Fradkin, E. S.
ON THE PROBLEM OF THE INTERACTION OF TWO QUANTUM FIELDS. [1962] 4p. 3 refs.
Order from OTS or SLA $1.10 62-10646

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 100, no. 5, p. 897-900.

DESCRIPTORS: *Quantum mechanics, *Particles, *Nuclear reactions, Mesons, Nucleons, Operators (Mathematics).

Gel'man, A. D., Moskvin, A. I. and others.
COMPLEX-COMPOUNDS OF TRANS-URANIUM ELEMENTS. [1962] 220p.
Order from CB $17.50

Trans. of mono. Kompleksnye Soedineniya Teansuranovykh Elementov, Moscow, 1961, 223p. An unedited rough draft trans. is available from OTS or SLA $14.50 as 62-24265, FTD-TT-61-246, AD-274 119, 30 Mar 62 [214]p.

DESCRIPTORS: *Radiochemistry, *Transuranic elements, *Complex compounds, *Isotopes, Neptunium, Plutonium, Curium, Berkelium, Californium, Einsteinium, Fermium, Mendelevium.

Kamenetskii, V. D. and Yavorskii, B. M.
THE APPLICATION OF THE EXPANSION METHOD TO THE ELASTIC SCATTERING OF SLOW ELECTRONS BY HEAVY ATOMS. 15 Jan 62 [22]p. 29 refs.
FTD-TT-61-183; AD-270 782.
Order from OTS or SLA $2.60 62-15829

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 5, p. 26-34.

DESCRIPTORS: *Electrons, *Elastic scattering, *Atoms, *Mercury, *Helium, Theory, Integral equations, Numerical analysis, Functions, Statistical analysis, Quantum statistics.

The expansion method is used to study the elastic scattering of slow electrons by heavy atoms. Calculations are made of the S, P, D and F-cross-sections of elastic scattering by Hg and Ca without taking exchange into account, and of the S-cross-section on Hg taking exchange into account. In order to control the accuracy of calculations by the expansion method calculations are carried out by Drukarev's method of integral equations for the S-cross-section of elastic scattering by Hg without taking exchange into account. The influence of the valence-electron wave functions and of one or another approximation for describing the interaction of the incident electron with the atomic core is studied. For the cross section of elastic scattering of electrons by Hg, a comparison with experimental data is made. The accuracy of the wave functions of a scattered particle obtained by the expansion method is examined. (Author)

Miura, Masatosi, Kawamatsu, Syunzi and others.
GRAFT POLYMERIZATION OF POLYETHYLENE BY γ-RAY. July 61, 13p. 2 refs.
Order from OTS $0.50 AEC-tr-4321

Trans. of mono. (paper) presented at the Japan Conference on Radioisotopes (no. 3) held in Tokyo, 14-16 Sep 59.

DESCRIPTORS: *Gamma rays, Chemical bonds, *Polymerization, *Ethylenes, Styrenes, Acrylonitriles, Organic solvents.

Studies were made of the grafting reaction and the properties of graft co-polymers in the graft polymerization process, in which polyethylene has been grafted with styrene or acrylonitrile (AN) by γ-ray either through the immersion technique or through the vapor phase technique. When styrene is used, the immersion technique has resulted in decrease of the grafting rate with the irradiation time but, in the vapor phase technique, the grafting rate has increased early part of the irradiation time. When AN is used, the grafting rate has increased with in irradiation time both techniques. When styrene is used, higher tensile strength is obtained by the vapor phase technique than by the immersion technique. This is due probably to the uniformity of the grafted film. When AN is used, higher tensile strength is obtained by the immersion technique. Also when AN is used, graft polymerization induced crosslinking, and heat treatment increased the elastic modulus considerably. When divinyl benzene is added to styrene for graft polymerization, the gel content increased considerably but the number of link between polyethylene and polystyrene is small.

Nesmeyanova, G. M. and Alkhazashvili, G. M.
A STUDY OF THE EFFECT OF CERTAIN ADDITIVES ON THE OXIDATION OF URANIUM IN ACID MEDIA. 6 Mar 62 [10]p. 7 refs.
Order from OTS or SLA $1.10 62-14792

Trans. of #Atomnaya Energ[iya] (USSR) 1961, v. 10 [no. 6] p. 587-591.

DESCRIPTORS: *Uranium, *Oxidation, Transition elements, Metallic compounds, Additives, Sulfuric acid, Acids, Chemical reactions, Catalysts, Catalysis, Ores

The effect of various transition metal additives, such as compounds of cobalt, vanadium, manganese and mixtures of divalent copper and iron was established on the degree of oxidation and dissolution of mixed oxides of uranium, using various oxidizing agents in an acid medium. The most pronounced effects were observed with compounds of vanadium, copper and iron, which allow complete oxidation of uranium values at relatively low (5 - 10 grams per liter) concentrations of sulfuric acid. Minerals containing copper and iron, occurring as components of uranium bearing ores, also increase the rate of uranium oxidation process. This effect depends on solubility of such minerals in sulfuric acid. If the ore is found to contain difficulty soluble minerals composition of which includes transition elements, such elements may be added to the process as easily soluble salts. Divalent manganese has the same catalytic effect on the mixed oxide oxidation process, using potassium chlorate, as do MnO_2 and Co_2O_3. (Author)

Shevchenko, V. B. and Zhdanov, Yu. F.
EXTRACTION OF SULFURIC ACID AND URANYL SULFATE BY TRIBUTYL PHOSPHATE, tr. by Lydia Venters. Oct 61, 4p. 12 refs.
Order from OTS or SLA $1.10 AEC-tr-4842

Trans. of Radiokhimiya (USSR) 1961, v. 3, no. 1, p. 7-9.

DESCRIPTORS: *Sulfuric acid, *Uranyl radicals, *Sulfates, Solvent extraction, *Phosphates, *Butyl radicals, Organic solvents

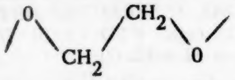
It is shown that tributyl phosphate (TBP) is a poor extracting agent for uranyl sulfate and sulfuric acid. It was found that during the extraction of uranyl sulfate sulfuric acid exerts a salting-out effect. The slope of the curve in the diagram $C_d = f\{[TBP]\}$ for sulfuric acid is equal to 2. 2, for uranyl sulfate 3. 3. (Author)

Slovokhotova, N. A., Sadovskaya, G. K., and Kargin, V. A.
INFLUENCE OF FAST ELECTRONS ON THE STRUCTURE OF POLYETHYLENETEREPHTHALATE. [1961] (2 figs. omitted) 12 refs.
Order from OTS or SLA $1.10 62-10980

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 4, p. 515-520.

DESCRIPTORS: *Electrons, Crystal structure, *Polymerization, *Ethylenes, *Phthalates, Isomeric transitions, Ionization, *Radiation effects, Phenyl radicals, Radiochemistry.

Polyethyleneterephthalate on irradiation with fast electrons goes over from the crystalline to the amorphous state. This amorphisation is associated with the isomerization of certain portions of the polymer chain with the transition of group



from trans-form to gosh-form. The isomerization of the polymer chain links on irradiation indicates that part of the energy of ionizing radiation in the polymer is transformed into vibration energy. In the polyethylene-terephthalate, on irradiation there mainly takes place a process of lacing with the formation of polyphenyl systems, but there also takes place a process of destruction. The energy required for accomplishing either process is much greater than that required for lacing together the polystyrole. (Author)

Tissi, C., Popoli, G. and others.
THE MANUFACTURE OF A PRESSURE VESSEL FOR AN ELECTRO NUCLEAR REACTOR OF 508 THERMAL MW BUILT OF FORGED PARTS. June 62.
Order from BISI £10 BISI-2523

Trans. of mono. (paper) presented at the Conference on Heavy Forging, Terni, Sep 61.

DESCRIPTORS: *Welding, *Pressure vessels, *Nuclear power plants, Forging.

Zollinger, H.
KINETIC ISOTOPE EFFECTS AND THEIR APPLICATION IN THE INVESTIGATION OF AZO-COUPLINGS (Kinetische Isotopeneffekte und ihre Anwendung bei der Untersuchung von Azokupplungen). [1959] 35p. (foreign text included) 61 refs.
Order from OTS or SLA $3.60 AEC-tr-3736

Trans. of Angewandte Chemie (West Germany) 1958, v. 70, no. 8, p. 204-210.

DESCRIPTORS: Labeled substances, *Radioactive isotopes, Heavy elements, *Deuterium, *Tritium, *Azo radicals, Reaction kinetics, Exchange reactions, Organic compounds.

Elementary Particles

Dmitrievskii, V. P., Zamolodchikov, B. I., and Kol'ga, V. V.
A CYCLOTRON WITH AN ALTERNATING MAGNETIC FIELD FOR MULTIPLE CHARGED IONS. [1961] [14]p. 10 refs.
Order from OTS or SLA $1.60 UCRL Trans-685

Trans. of mono. Tsiklotron s Periodicheskim Magnitnym Polem dlya Mnogozaryadnykh Ionov, Moscow, 1960.

DESCRIPTORS: *Cyclotrons, Magnetic fields, Ions, *Ion beams, Acceleration, Particle accelerators.

It is proposed to apply a cyclotron with a periodic magnetic field for the acceleration of multiple-charged ions. This cyclotron has a magnetic field increasing along the radius in accordance with the resonance condition for the given ion. The vertical focusing of particles is brought about by alternating gradients of the magnetic field which is formed due to the periodic change of the field along the azimuth and radius, whereupon the maxima of intensity of the magnetic field are disposed on spiral lines. The general relations and the necessary accelerating voltages are calculated for the acceleration of the multiple-charge ions with a given ratio of the charge to the mass in the interval, $\xi_{min} \leqslant \xi \leqslant \xi_{max}$. (Author)

Franzini, T.
PROTON EMISSION FROM HYDROGENIZED PALLADIUM (Emissione di Protoni dal Palladio Idrogenato) tr. by Evro Layton and John Miller. Mar 58 [15]p. 19 refs. AmMetSoc T-I-7.
Order from OTS or SLA $1.60 59-12028

Trans. of Nuovo Cimento (Italy) 1938, ser. 8, v. 15, p. 88-99.

DESCRIPTORS: *Palladium, Hydrogenation, *Protons, *Electrons, *Secondary emission, *Thermionic emission, Electric fields, Velocity, Statistical distributions

Matora, I. M.
A NEW SCHEME FOR EXTRACTION OF PARTICLES FROM THE SYNCHROCYCLOTRON. [1961] [14]p. 13 refs.
Order from OTS or SLA $1.60 UCRL Trans-690

Trans. of mono. Novaya Skhema Vyvoda Chastits iz Fazotrona, Moscow, 1960.

DESCRIPTORS: *Synchrocyclotrons, Cyclotrons, *Particles, *Ion beams, Focusing, Magnetic fields, Particle beams, Particle accelerators.

In the new scheme all ion paths at the last revolution just before entering the channel are focused not at the node which is situated at the finite equilibrium path far from the channel, but at a point within it. Furthermore the necessary distribution of the magnetic field in the regenerator differed from a typical distribution used in the inner plate at the beginning of the magnetic channel is eliminated, and the external plate is moved much closer to the final orbit. Therefore, all ions whose paths end at the face of the inner plate in an ordinary deflector receive an additional deflection when they pass through the field region of the only external plate of the channel, and only about 30% of all ions with total energy are absorbed at the face of the inner plate of the following area of the channel. The calculated effectiveness of the extraction system can reach 30 to 50%.

Instruments and Installations

Keller, R.
PROJECT FOR A SOURCE OF POLARIZED IONS, tr. by Mrs. Aubrey Kempner. 19 Jan 60 [40]p. (174 equations 20 figs. omitted). CERN 57-30.
Order from OTS or SLA $3.60 62-25265

Trans. of mono. Projet d'Une Source d'Ions Polarisés, Geneva, 1957.

DESCRIPTORS: *Ions, *Polarization, *Ion sources, Magnetic separation, Lenses, Particle trajectories, Amplitude modulation, Oscillation, Cyclotrons, Atoms, Ionization, Linear accelerators, Particles, *Particle accelerators.

Contents:
The principle of magnetic separation
The adiabatic lens
Calculation of the trajectories
Separation of amplitude
Condition of oscillation
Domain of validity
Condition imposed on the diaphragm
Density of the atomic jet
Ionization and possible intensity of the polarized bundle
The problem of extraction

Mints, A.
CYBERNETIC ACCELERATOR. 15 May 62 [12]p. JPRS: 13770
Order from OTS or SLA $1.60 62-24730

Trans. from Izvestiya (USSR) 1962, 24 Apr, p. 6.

DESCRIPTORS: *Cybernetics, *Particle accelerators, Accelerators, Control, Control systems, Particle beams, Electromagnets.

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Kalmykov, P. E. and Bekatov, A. I.
STUDY OF THERMAL PROPERTIES OF READY-MADE CLOTHING ON AN INSTRUMENTED MODEL. 6 Mar 62 [9]p. 3 refs. JPRS: 12822.
Order from OTS or SLA $1.10 62-23403

Trans. of Gigiena i Sanitariya (USSR) 1961 [v. 26] no. 9, p. 41-44.

DESCRIPTORS: Military personnel, Personnel, *Clothing, Heat transfer, Anatomical models, Model tests.

Ways are shown for using an instrumented physical model to determine total (overall) heat transfer coefficient, heat transfer coefficient and total resistance to heat transfer under given temperature conditions.

PHYSICS

NEWS OF THE INSTITUTES OF HIGHER LEARNING, PHYSICS, 1961, NO. 1: SELECTED ARTICLES. 23 Jan 62 [21]p. 15 refs. FTD-TT-61-276; AD-270797.
Order from OTS or SLA $2.60 62-15805

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1961, no. 1, p. 20-23 and 138-142.

DESCRIPTORS: *Particle accelerators, Particles, *Elastic scattering, Probability, Metals, *Erosion, *Electric discharges, Sparks

Contents:
The calculation of accelerated-particle loss due to scattering by gas, by A. G. Vlasov
The problem of the mechanism of electrical erosion, by N. V. Afanas'ev and others.

PHYSICS BULLETIN, 1960, NO. 6: SELECTED ARTICLES. 18 June 62 [42]p. JPRS: 14158.
Order from OTS or SLA $4.60 62-25180

Trans. of Wu Li T'ung Pao (Chinese People's Republic) 1960, no. 6, p. 241-246, 254-258 and 270-272.

DESCRIPTORS: Physics, *Superconductivity, *Superconductors, *Light, Interference, Optics, Laboratories, Education, Training.

Contents:
Superconductivity, by Chang Hua-chia
The applications of light interference, by Chang Te-p'ei
New attempts to reform physical experiments, by Wen Chih-kuang.

Batsanov, S. S., Mazalov, L. N., and Chirkov, V. I.
CALCULATION OF THE REFRACTION OF IONS OF "NON-NOBLE" GASES (Raschet Refraktsii "Neblagorodnogazovykh" Ionov). [1962] [20]p. (foreign text included) 23 refs.
Order from OTS or SLA $1.60 62-14575

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 2, p. 121-125.

DESCRIPTORS: *Gases, *Ions, *Refraction, *Electrons, Polarization, *Perturbation theory, Special functions

The assumption was expressed that the screening constants for the 3d- and 4d-electron shells calculated by the Slater rules are overestimated by the value of the outer screening. Using this assumption, the ionic refractions of all elements of the "b" subgroups calculated by a method of the perturbation theory were in good agreement with the experiment. For the first time refractions were calculated for ions of lower degrees of oxidation: Sn^{2+} = 5.10, As^{3+} = 2.00, Sb^{3+} = 3.45, Bi^{3+} = 3.69, Se^{4+} = 1.36, and Te^{4+} = 2.45 cm^3. (Author)

Deigen, M. F. and Pekar, S. I.
ON STATES OF ELECTRON CONDUCTIVITY IN IDEAL HOMEOPOLAR CRYSTALS [O Sostoyaniyakh Elektrona Provodimosti v Ideal'nom Gomeopolyarnom Kristalle]. [1961] 106p. 18 refs. MDF D-106.
Order from OTS $0.50 62-11200

Trans. of Zhur[nal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1951, v. 21, no. 7, p. 803-808.

DESCRIPTORS: *Crystals, Conductivity, Deformation, Electromagnetic fields, Mathematical analysis, *Electrons, *Phase distortion.

The possibility is considered of local deformation of crystals by an electron field and of steady electron localization near this deformation. It is shown that such self-consistent local states of the electron do not exist in the approximate crystal continuum, but do exist for more detailed (atomic) crystal models if the corresponding critical inequality is satisfied. In the latter case the self-localized state is energetically more advantageous than the free electron state in the conduction band. (Author)

Grün, A. E.
LUMINESCENT-PHOTOMETRIC MEASUREMENTS OF ENERGY ABSORPTION IN THE RADIATION FIELD OF ELECTRON SOURCES FOR THE UNIDIMENSIONAL CASE IN AIR (Lumineszenz -Photometrische Messungen der Energieabsorption im Strahlungsfeld von Elektronenquellen Eindimensionaler Fall in Luft). [1962] [26]p. (foreign text included) 12 refs.
Order from SLA $2.60 62-16031

Trans. of Z[eitschrift für] Naturforsch[un]g (West Germany) 1957, v. 12a, no. 2, p. 89-95.

DESCRIPTORS: *Electrons, Sources, Electron beams, Energy, Absorption, Air, Luminescence, Photometers *Electron optics.

The energy absorption $\alpha(z)$ of air in the radiation field of a special electron source was measured as a function of the penetration depth z ("depth dosage curves"). The luminescence of air was used as a measure for the absorption. The electron source furnished an electron bundle, which was transported by dynamic pressure stage intervals from the vacuum into the air. The initial energy E_0 of the electron was varied from 5 to 54 kev. An exponential law was found for the range of transmission R of the electrons as a function of E_0. With z/R as the abscissa, and appropriately normalized, the measured functions $\alpha(z)$ show only a slight dependence on E_0. Values for the deceleration -dE/ds of electrons, which can be obtained from the measured curves, show good agreement with Bethe's theory. (Author)

Karakashev, V. A.
THE THEORY OF ONE INERTIAL SYSTEM. 23 Jan 62 [18]p. 3 refs. FTD-TT-61-392; AD-270 788.
Order from OTS or SLA $1.60 62-15833

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1961, v. 4, no. 5, p. 94-104.

DESCRIPTORS: *Inertial navigation, Theory, *Gyroscopes, Rotating structures, Oscillation, Stability, Drift, Errors, Accelerometers, Control systems, Servo systems, Servo motors, Computers, Diurnal variations, Rotation, Circuits, Electronic equipment, Vector analysis, Differential equations, Operators (Mathematics).

The possibility of obtaining a geographically oriented accelerometer platform with a natural oscillation period of 84.4 min is examined in the first approximation. The influence of gyroscope drift on the motion of a gyrostabilized platform and an accelerometer platform is studied, and errors in the determination of the coordinates of a moving object generated by drift of the "reference" coordinate system are derived. The study is conducted under the assumption that ideal elements are used in the system (with the exception of the floating gyroscopes), i.e., those not having inherent in-strumental and design errors to them.

Tamassy-Lentei, Ilona.
CALCULATION OF THE STATIONARY BOND ENERGY OF THE H_2 MOLECULE (Kossuth Lajos Tudomanyegyetem Elmeleti Fizikai Intezete). 15 Feb 62 [8]p. JPRS: 12529.
Order from OTS or SLA $1.10 62-19801

Trans. of Magyar Fizikai Folyoirat (Hungary) 1961, v. 9, no. 4, p. 265-268.

DESCRIPTORS: *Hydrogen, *Chemical bonds, Energy, Particle trajectories, Wave analysis, Functions.

The stationary bond energy of the H_2 molecule can be determined by means of molecular trajectories constructed from the wave function of the H_2^+ molecule ion. A good approximation can be obtained if the wave function of H_2^+ is a 1s-hydrogen type single-center function centered at the origin. If the wave function is the linear combination of 1s, 2s, and 3d-type single-center functions, a satisfactory approximation can be obtained with regard to the distance as well. (Author)

Tjaden, K.
ABSORPTION OF LONGITUDINAL ULTRASONIC WAVES IN ALUMINUM AT HIGH TEMPERATURES. [1962] [37]p. 20 refs.
Order from SLA $3.60 62-14435

Trans. of Acustica (Switzerland) 1961, v. 11 [no. 3] p. 127-136.

DESCRIPTORS: *Aluminum, Single crystals, Crystals, *Ultrasonic radiation, *Absorption, Propagation, Temperature, High temperature research, Ultrasonics.

Toyosawa, Y.
SELF-TRAPPED ELECTRON AND THE ACOUSTICAL MODE LATTICE VIBRATION. [1962] 18p.
Order from ATS $33.80 ATS-10N56J

Trans. of Busseiron Kenkyu (Japan) 1960, ser. 2, v. 7, no. 2[41] p. 123-141.

DESCRIPTORS: *Electrons, *Acoustics, *Lattices, *Vibration.

Electricity and Magnetism

FERROMAGNETIC THIN-FILM STUDIES. 23 May 62, 5p. AID Rept. 62-70.
Order from OTS or SLA $1.10 62-25764

Review of #Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1962, v. 26, no. 2, p. 296-317.

DESCRIPTORS: *Ferromagnetic materials, *Thin films, Films, Magnetic properties, Permeability, Rotation, Resonance, Radiofrequency, Temperature, Magnetic fields, Magnetic effects.

Contents:
Theoretical analysis of magnetic permeability in anisotropic magnetic thin films, by A. L. Frumkin
Experimental radiofrequency studies of permeability in anisotropic magnetic films, by A. L. Frumkin
Theory of magnetization reversal of ferromagnetic thin films in strong fields, by A. M. Rodichev and E. N. Rumanov
Large Barkhausen effects in ferromagnetic thin films, by P. D. Kim and G. M. Rodichev
Domain structure of ferromagnetic thin films as a function of temperature, by L. V. Kirenskii and others
Anisotropy of ferromagnetic thin films, by M. K. Savchenko and others.

Barabanenkov, Yu. N.
MAXWELL EQUATIONS IN A ROTATING REFERENCE SYSTEM. [1961] 6p. 6 refs. MDF B-173 [AFCRL-33] AD-255 670.
Order from OTS $0.50 62-11553

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-mate[maticheskie] Nauki (USSR) 1959, no. 1, p. 141-145.

DESCRIPTORS: *Bodies of revolution, *Spheres, *Electromagnetic fields, Mathematical analysis, *Partial differential equations.

The Maxwell equations in a rotating reference system are reduced to a three-dimensional vector form. The equations obtained are used to compute the electromagnetic field of a rotating magnetized body in a reference system bound to the body. (Author)

Genkin, V. N. and Fain, V. M.
ON THE LINE WIDTH OF ANTIFERROMAGNETIC RESONANCE. [1962] 8p. 8 refs.
Order from OTS or SLA $1.10 62-14832

Trans. of #Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1961, v. 41, no. 5, p. 1522-1526.

DESCRIPTORS: *Antiferromagnetism, *Resonance, Relaxation time, Temperature, Magnetism.

Relaxation of the uniform precession of the magnetization of an antiferromagnetic due to interaction between the uniform precession and spin waves is considered. A model with localized spins and exchange interaction was employed in the calculations. Terms of fourth order in the creation and annihilation operators were included in the Hamiltonian. The uniform precession relaxation time at low temperatures is derived. (Author)

Pawlek, F. and Reichel, K.
PREPARATION OF ANISOTROPIC LEAD FERRITE PERMANENT MAGNETS WITHOUT USING A MAGNETIC FIELD IN THE PRESSING PROCESS (Herstellung von Anisotropen Bleiferrit-Dauermagweien Ohne Anwendung Eines Magnetfeldes Beirn Pressvorgang). [1961] [3]p. (foreign text included) 6 refs.
Order from SLA $1.10 62-14056

Trans. of die Naturwissenschaften (West Germany) 1957, v. 44, no. 14, p. 390.

DESCRIPTORS: Lead compounds, Ferrites, *Magnets, Preparation.

Vicena, F.
INFLUENCE DES DISLOCATIONS SUR LE CHAMP COERCITIF DANS LES CORPS FERROMAGNÉTIQUES (Influence of Dislocations on the coercive Field in Ferromagnetic Bodies) tr. by M. I. Melnick. 3 Nov 58 [49]p. 14 refs. CEA no. R 514 (text in French).
Order from OTS or SLA $4.60 CEA-tr-R514

Trans. in French of [Chekhoslovatskii Fizicheskii Zhurnal] 1954, v. 4, no. 4, p. 419-438.

DESCRIPTORS: Magnetic fields, *Ferromagnetic materials, *Ferromagnetism, Energy, Deformation, Crystals, Iron.

Optics

Boldyrev, N. G.
GEOMETRIC OPTICS IN LOBACHEVSKII SPACE [1961] 3p. 3 refs. MDF B-172; [AFCRL 112] AD 251 771.
Order from OTS $0.50 62-11552

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-mate[maticheskie] Nauki (USSR) 1959, no. 3, p. 7-9.
Another translation is available from OTS $0.50 as 61-11183, APL/JHU TG-230-T210, 11 Jan 61, 3p.

DESCRIPTORS: *Optics, Theory.

A Beltrami plane is taken as the meridian plane of a centered optical system. The neighborhood of the optical axis ($\eta = 0$) is examined in terms of Gaussian paraxial optics.

Borovitskii, S. I. and Gorelik, G. S.
HETERODYNING OF LIGHT. [1961] 11p. 5 refs. MDF B-176 [AFCRL-56] AD-255 673.
Order from OTS $0.50 62-11564

Trans. of Usp[ekhi] Fiz[icheskikh] Nauk (USSR) 1956, v. 59, no. 3, p. 543-552.

DESCRIPTORS: *Light, Theory, Optics.

The heterodyning of two nearby optical spectral lines is explained.

Kard, P.
THEORY OF INTENSIFICATION OF LIGHT TRANSMITTANCE BY OPTICAL SURFACES. [1962] 15p. 6 refs.
Order from OTS or SLA $1.60 62-10972

Trans. of Loodus ja Matemaatika (USSR) 1959, no. 1, p. 67-85.

DESCRIPTORS: Light, *Light transmission, Theory, *Optics, Surfaces, Coatings, Metal coatings, Reflection, Refractive index.

Placzek, G.
THE RAYLEIGH AND RAMAN SCATTERING (Rayleigh-Streuung und Raman Effekt) tr. by Ann Werbin. June 62, 206p. 282 refs.
Order from OTS $3.00 UCRL Trans-526(L)

Trans. of mono. Handbuch der Radiologie, Leipzig, 1934, no. 6, pt. 2, p. 209-374

DESCRIPTORS: *Light, *Scattering, *Raman spectroscopy, *Polarization, Quantum mechanics, Atoms, Electrons, Harmonic oscillators, Molecular rotation, Vibration.

Rang, O.
THE ELECTROSTATIC STIGMATOR, A CORRECTIVE FOR ASTIGMATIC ELECTRON LENSES. [1962] 18p. (18 figs. omitted) 16 refs.
Order from SLA $1.60 62-16202

Trans. of Optik (West Germany) 1949, v. 5, no. 8/9. p. 518-530.

DESCRIPTORS: Electron microscopy, *Electron lenses, *Optical instruments, *Electrostatic fields, Lenses, Aspherical lenses, Refractive properties, Electron optics, Cylindrical bodies.

One can employ cylindrical-lens systems in electron-optics to compensate for astigmatic error, as in light optics. An electrostatic field was proposed by O. Scherzer, which has the projecting characteristics of two crossed cylindrical lenses with oppositely directed refracting powers. The field was built up by means of six electrodes arranged around the optical axis. The refracting power and angular position of the individual electrode pairs can be conveniently adjusted from the outside by means of voltage variation. This corrective was termed "Stigmator" because with it astigmatic electron configurations were again made stigmatic. The stigmator is described and its method of operation demonstrated by means of some examples. (Author)

Samson, A. M.
DISTRIBUTION OF RADIATION IN A PLANE-PARALLEL LAYER AT AN ARBITRARY INDICATRIX OF SCATTERING. [1962] 7p. 12 refs.
Order from OTS or SLA $1.10 62-14076

Trans. of Akademiya Nauk BSSR [Minsk]. Doklady [1959, v. 3, no. 5, p. 197-201].

DESCRIPTORS: *Light, Light transmission, Reflection, Scattering, Diffusion, Distribution, Mathematical analsysi, Differential equations.

The radiation distribution in a plane-parallel layer is studied, proceeding from the transfer equation. If it is assumed that the radiation fluxes, which are distributed in a medium are completely diffused, this equation is reduced to two differential equations of the first order. These equations are used for solving some problems of angular relationship of light intensity emitted by the layer. The results of the calculation agree with the results of a strict theory, which had been obtained by very difficult calculations.

Steigerwald, K. H.
A NEW TYPE OF RAY-PRODUCING SYSTEM FOR THE ELECTRON MICROSCOPE. [1962] 14p. (9 figs. omitted) 2 refs.
Order from SLA $1.60 62-16629

Trans. of Optik (West Germany) 1949, v. 5, no. 8/9, p. 469-478.
Another trans. is available from SLA $1.60 as 61-20700, 21 Aug 61 [12]p.

DESCRIPTORS: *Electron microscopes, *Electron beams, Production, Triodes, Cathodes

For abstract see Technical Translations 7: 47, 1962.

Solid State Physics

Dekhtyar, I. Ya. and Dekhtyar, M. I.
ON FLUCTUATIONS IN THE ELECTRON CONCENTRATION IN SOLID SOLUTIONS. [1960] 8p. 4 refs. MDF D-144.
Order from OTS $0.50 62-11187

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avadenii] Fizika (USSR) 1960, no. 2, p. 75-80

DESCRIPTORS: *Metallic crystals, Electron transitions, Crystals, Solids, Solutions, Metals, Alloys, Theory.

An effective method is proposed on determining the fluctuations in the electron concentration in solid solutions. The statistical approach is used to analyze the properties of solid solutions. The fluctuations of the local electron concentration are calculated first and then the individual contribution of each of the fluctuations to the magnitude of the given property is estimated and the contributions from the separate fluctuations are then summed. A basic group of n atoms, within whose limits the electron fluctuation is important for the given property, is selected for the computation. The group is composed of atoms of a given kind and a certain number of its nearest neighbors. For closely-packed lattices, the base group consists of a central atom and twelve nearest neighbors so that n = 13. In a cubic, body-centered lattice, eight atoms, the nearest neighbors, and six atoms of the next coordination sphere must be included in addition to the central atom so that n = 15.

Dzhaksimov, E.
A CALCULATION OF THE GALVANO- AND THERMO-MAGNETIC EFFECTS IN SEMI-CONDUCTORS TAKING ACCOUNT OF THE "ENTRAINMENT" EFFECT. [1960] 9p. 18 refs. MDF D-145.
Order from OTS $0.50 62-11188

Trans. of A[kademiya] N[auk] Uzb[ekskoi] SSR [Tashkent]. Izv[estiya. Seriya Fiziko-Matematicheskikh Nauk] 1959, no. 6, p. 52-59.

DESCRIPTORS: *Semiconductors, Magnetic properties, Mathematical analysis, Magnetic fields, Electrons, Scattering.

A detailed calculation is made of all the kinetic coefficients in a magnetic field, taking account of the "entrainment" effect with the single method of the usual semi-quantized kinetic equations. Since the "entrainment" effect is symmetric with respect to both electrons and phonons, two kinetic equations for the electrons and phonons are solved. For the general case, when a magnetic field is assumed present, the kinetic equations and their solutions are in vector form. This allows one to calculate easily, along with the electrical, thermo-electrical, and thermal phenomena, the coefficients of all eight galvano- and thermomagnetic effects simultaneously. The electron scattering is considered to be elastic and the constant energy surfaces are assumed to be spherical.

Glazov, V. M.
CONSTRUCTION OF THE SOLIDUS LINE BY THE METHOD OF MEASURING MICROHARDNESS. [1962] [7]p. 11 refs.
Order from OTS or SLA $1.10 62-10640

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Topl[ivo] 1961, no. 4, p. 39-42.

DESCRIPTORS: *Aluminum alloys, *Copper alloys, *Bismuth alloys, Microstructure, Hardness, Grains (Metallurgy), Liquids, Solids, Diffusion, Phase studies, Crystal, Crystallization.

The possibility of using the method of measuring the microhardness to determine the solid line by investigating the composition in the center of grains of alloys not crystallized in equilibrium is analyzed. The method proposed is justified experimentally by the example of the Al-Cu and Al-Si systems and it is shown that the results obtained by this means are in good agreement with the results of investigations performed by using other methods. The equilibrium solidus line for the Bi-Sb system is constructed. (Author)

Leymonie, C[laude] and Lacombe, P.
DETERMINATION OF VOLUME SELF-DIFFUSION CONSTANTS OF IRON IN THE α PHASE BY MEANS OF RADIOACTIVE ISOTOPES (Détermination des Constantes d'Autodiffusion en Volume du Fer en Phase α à l'Aide des Isotopes Radioactifs) tr. by A. L. Monks. 5 Jan 58, 21p. (foreign text included) 8 refs.
Order from OTS or SLA $2.60 AEC-tr-3531

Trans. of Revue de Métallurgie (France) 1958, v. 55, [no. 6] p. 524-530.

DESCRIPTORS: *Iron, *Phase studies, *Radioactive isotopes, *Diffusion, Determination.

Samarin, A. M. ed.
STRUCTURE AND PROPERTIES OF LIQUID METALS, tr. by Lydia Venters. May 62, 206p. 494 refs.
Order from OTS $3.00 AEC-tr-4879

Trans. of mono. Stroenie i Svoistva Zhidkikh Metallov, Moscow, 1960.

DESCRIPTORS: *Liquid metals, Molecular structure, Metals, Alloys, Thermodynamic, Liquids, Crystal structure, Surface tension, Melting, *Solid state physics, Tin, Crystallization, Transition elements, Structures, Chemical bonds, Semiconductors, Viscosity, Iron alloys, Nickel alloys, Cobalt alloys, Carbon alloys, Silicon alloys, Manganese alloys, Chromium alloys, Calcium, Aluminum alloys, Electric potential, Diffusion, Neutron spectroscopy, Physical properties, Mass spectroscopy, Metallic smoke deposits, Vapors, Metallurgy

Contents: (over)

Macromolecular structure of liquid metals and interaction of macromolecules, by Yu. A. Klyachko
Connection between thermodynamic properties of metallic alloys and state diagrams, by O. A. Esin and I. T. Sryvalin
Some problems pertaining to the structure of liquids, by S. F. Khokhlov
Connection between the structure of monatomic liquids and the structure of crystals, by I. Z. Fisher'
Surface tension and structure of metallic melts, by S. N. Zadumkin
Connection between the short-range order of atoms in liquid and the structure of the same element in solid state, by V. E. Neimark
Short-range order in liquid metals and alloys, by A. F. Skryshevskii
Kinetic properties of liquid metallic alloys, by D. K. Belashchenko
Crystallization of tin from a supercooled state, by E. G. Shvidkovskii and N. K. Rakova
Structure of liquid metals in connection with their electronic structure, by V. K. Grigorovich
Structures of transition metals in liquid state, by V. K. Grigorovich
Peculiarities of the change in the structure and in the character of the chemical bond of semiconductors on melting, by V. M. Glazov
Interaction between alloying components in liquid ternary alloys, by V. M. Glazov
Special features of the structure of liquid eutectics and the character of the viscosity-constitution diagrams in the eutectic-type systems, by V. M. Glazov and A. A. Vertman

Physicochemical properties of liquid iron, nickel and cobalt alloys, by A. A. Vertman and A. M. Samarin
Singularities of the structure of liquid alloys of the Fe-C system, by A. A. Vertman and others
Several singularities of the structure of liquid alloys of silicon with iron, manganese and chromium, by P. V. Gel'd and others
On the interparticle interaction in liquid alloys of silicon with iron and nickel, by P. V. Gel'd and Yu. M. Gertman
On the ordering of liquid alloys of calcium with aluminum, by P. V. Gel'd and P. V. Kocherov
On the electrodiffusional potential in metals, by B. S. Bokshtein and others
Use of neutron spectroscopy for investigating physical properties of elements in solid and liquid states, by M. M. Bredov
Mass spectra of the metallic vapors and the structure of metallic vapors, by G. M. Martynkevich
Answer of Prof. Sauerwald to the Commission's questionnaire
Answer of Dr. Roll to the Commission's questionnaire.

Sivintsev, Yu. V.
BACKGROUND IRRADIATION OF THE HUMAN BODY.
2 Apr 62 [111]p. 226 refs. JPRS: 13288.
Order from OTS or SLA $9.60 62-23779

Trans. of mono. Fonovoe Obluchenie Chelovecheskogo Organizma, Moscow, 1960, 95p.

DESCRIPTORS: Radiation hazards, *Radiation tolerance, Radiation effects, Lungs, Bones, Reproductive system, *Atomic energy levels, *Nuclear power plants, Industrial medicine.

In this work the values of the various components of external and internal background irradiation of the human body by nuclear radiation have been calculated on the basis of experimental data published in the literature. With the aim of substantiating the permissible levels of irradiation the doses created by the background in the gonads, bones and lungs have been determined; these doses are compared with dangerous genetic and carcinogenic doses. It has been shown that the dose of background irradiation can be taken as a basis for the analysis of permissible levels of irradiation. The book is designed for physicists and biologists working in the field of the biological action of nuclear radiation as well as persons interested in this problem. (Soviet publisher's note)

Szigeti, Gyorgy, Winter, Erno, and Millner, Tivadar.
ECONOMIC SIGNIFICANCE OF TECHNICAL PHYSICAL RESEARCH IN THE PAST AND ITS PERSPECTIVE IN THE FIELD OF VACUUM ENGINEERING, PTS. 1-3. JPRS: 8065.
Order from OTS or SLA $2.60 62-19242

Trans. of Magyar Tudomanyos Akademia Muszaki Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1960, v. 27, no. 1/2, p. 80-82, 103-104, 114-130.

DESCRIPTORS: Physics, *Solid state physics, Semiconductors, Transistors, *Electron tubes, *Incandescent lamps, *Tungsten, Crystallization, Vacuum systems, Engineering, Economics.

Theoretical Physics

Borovik, E. S., Mitin, R. V., and Knyazev, Yu. R.
LONG ARCS UNDER HIGH PRESSURE, tr. by B. W. Kuvshinoff. 14 May 62, 13p. 10 refs.
APL/JHU TG 230-T295.
Order from OTS $0.50 62-11685

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1961, v. 31, no. 11, p. 1329-1336.

DESCRIPTORS: *Plasma physics, Gas ionization, *Helium, *Hydrogen, Pressure, Temperature.

Experiments with long high-pressure arcs were made to study the possibility of heating a dense plasma to several tens of thousand degrees with a relatively small expenditure of power. Spinning of the gas about the arc made it possible to obtain long, stable arcs at helium pressures of 1 to 100 atm. For arcs longer than 5 cm, a large part of the energy is produced directly in the arc column. With pressure above 20 to 30 atm radiation losses become the determining factor in the balance of energy. A study of the interaction of pressure, voltage gradient, and current in the arc made it possible to compute such arc parameters as arc channel radius, plasma temperature, and degree of plasma ionization. In experiments with an arc in helium the temperature in the plasma of the arc column was 2.2×10^{4}°K; the other parameters of the arc had the values: $p = 60$ atm, $I = 100$ amp, $E = 40$ v/cm, $r_0 = 0.08$ cm. This yields a value of about 2×10^5 w/cm^3 for the power in the plasma The radiation losses increase considerably with decrease in the ionization potential V_i; inasmuch as this parameter is twice as large for helium as it is for hydrogen, it follows that hydrogen is much more difficult to heat than helium. If the plasma is sufficiently dense (correspondingly the photon path length will be small), the use of a mixture of helium and a substance with a low ionization potential will permit a decrease in power expenditure, because with an absorbing plasma surrounding the arc only its external, "coldest" layers will radiate energy.

Eidman, B. Ya.
ON THE REACTION FORCE OF RADIATION IN A MAGNETOACTIVE PLASMA. [1961] 8p. 6 refs.
MDF E-106. [AFCRL-TN-60-786] AD 244 802.
Order from OTS $0.50 62-11252

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1960, v. 3, no. 2, p. 192-198.

DESCRIPTORS: *Cerenkov radiation, Mathematical analysis, *Plasma physics, Electromagnetic properties.

An expression has been obtained for the reaction force of radiation acting on a charge which moves in a magnetoactive plasma. It is shown that the possibility of the radiation of ultralight Doppler frequencies diminishes the resistance experienced by particles during their oscillations in a plasma and even leads to resonant step up of the oscillations in certain cases. (Author)

Gertenshtein, M. E.
LIGHT ENGENDERED GRAVITATION. 6 June 62, 2p. I-1376, JPRS: R-2382-D.
Order from OTS $0.50 62-11697

Trans. of Znanie-Sila (USSR) 1961 [v. 36] no. 12, p. 11-12.

DESCRIPTORS: *Light, *Electromagnetic waves, *Gravity, Production, Magnetic fields, Intensity.

Hezlin, M. V.
ELECTROSTATIC INSTABILITY OF AN INTENSE ELECTRON BEAM IN A PLASMA. 3 Apr 62 [16]p. 3 refs. FTD-TT-62-230, AD-274 924.
Order from OTS or SLA $1.60 62-24929

Unedited rough draft trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1961, v. 41, no. 4, p. 1015-1022.

DESCRIPTORS: *Electron beams, *Plasma physics, *Electrostatics, Stability, *Plasma oscillations, Electrons, Diffusion, Magnetic fields, Gas flow, Discharge tubes, Laboratory equipment, Solenoids, Cathodes.

It is shown that the current density in a quasineutral beam of fast electrons propagated in a plasma has an upper limit above which the beam becomes unstable with respect to the formation of a virtual cathode. The mechanism of this instability is discussed. (Author)

Motchmann, Harald.
MEASURING THE OSCILLATOR STRENGTH OF A FEW NI-LINES IN A WATER AND AIR-STABILIZED LIGHT ARC (Messung der Oszillatorenstärke einiger NI-Linien im Wasser- und Luttstabilisierten Lichbogen). [1962] 18p. (1 fig. omitted) 14 refs.
Order from SLA $1.60 62-16090

Trans. of Zeitschrift für Physik (West Germany) 1955, v. 143 [no. 1] p. 77-92.

DESCRIPTORS: *Plasma physics, Plasma oscillations, *Spectrographic analysis, Lighting equipment

The oscillator strength of 10 NI-multiplets (located in the wave length range between 5500 and 4000 Å) and of their components are determined through absolute intensity measurements. In this connection the absolute intensities of a hydrogen and an oxygen line are used to determine the temperature and plasma composition from an eightfold equation system. The measured values of the absorption oscillator strengths obtained generally agree quite well with the theoretical relative values within a multiplet according to Russell, as well as with the absolute values computed according to Bates and Damgaard. Occasionally, though, larger deviations occur. (Author)

Thermodynamics

LOW TEMPERATURES: SUPERCONDUCTIVITY AND SUPERFLUIDITY: ANNOTATED BIBLIOGRAPHY 1954-59. 10 Mar 60 [21]p. 148 refs. AF 1419520.
Order from OTS or SLA $2.60 62-28362

DESCRIPTORS: *Bibliography, *Cryogenics, Low temperature research, *Superconductivity, *Liquefied gases, Fluid flow.

Deeg, E.
PRINCIPLES UNDERLYING THE THEORETICAL TREATMENT OF DIFFERENTIAL THERMAL ANALYSIS: PRACTICAL DEDUCTIONS. [1962] 32p. 13 refs.
Order from SLA $3.60 62-14452

Trans. of Deutsche Keramische Gesellschaft. Ber[ichte] (West Germany) 1956, v. 33, no. 10, p. 321-329.

DESCRIPTORS: *Calorimetry, Theory, Thermal conductivity.

Dorfman, L. A.
THERMAL BOUNDARY LAYER ON A ROTATING DISC. [1959] 4p. 5 refs. MDF D-128.
Order from OTS $0.50 62-11206

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 119, no. 6, p. 1110-1112.

DESCRIPTORS: *Disks, *Thermodynamics, *Boundary layer, *Turbulence, Fluids, Velocity, Heat.

The problem is approached by: (1) comparing the equation of the tangential velocities of the average turbulent motion of an incompressible fluid in the boundary layer of a rotating disk

$$v_r\frac{\partial v_\phi}{\partial r}+\frac{v_r v_\phi}{r}+v_z\frac{\partial v_\phi}{\partial z}=\frac{\partial}{\partial z}\left(\nu\frac{\partial v_\phi}{\partial z}-\overline{v'_z v'_\phi}\right)$$

with the energy equation without dissipative terms

$$v_r\frac{\partial T}{\partial r}+v_z\frac{\partial T}{\partial z}=\frac{\partial}{z}\left(a\frac{\partial T}{\partial z}-\overline{v'T'}\right)$$

where v_r, v_ϕ, v_z, T are the average values of the velocity components and the temperature and the primed values are the pulsating components (the bar above is the average sign); ν is the kinematic viscosity; $a=\lambda/c_p\rho$ is the temperature conduction; and (2) computing the heat emission for an arbitrary temperature gradient. The heat balance is formed for an annular element of the thermal boundary layer of thickness δ_T and width dr at a given radius r. The heat flux per second through this element in a radial direction $c_p\rho d\left(\int_0^{\delta_T} 2\pi r\, v_r T\, dz\right)$ is compensated by the heat emission from the disc surface in an annular strip with the area $\frac{2\pi r\ dr}{2\pi qr\ dr}$.

Ermolin, V. K.
USE OF A TWISTED STREAM TO INTENSIFY CONVECTIVE HEAT EXCHANGE UNDER INTERNAL PROBLEM CONDITIONS. [1960] 10p. 2 refs. MDF E-110.
Order from OTS $0.50 62-11255

Trans. of A[kademiya] N[auk SSSR. O[tdelenie] T[ekhnicheskikh N[auk]. Izvestiya: Energ[etika] i Avto[matika] 1960, no. 1, p. 55-61.

DESCRIPTORS: *Heat exchangers, Heat transfer, *Convection, Analysis, *Fluid flow.

Weiss, Harald.
A MEASURING DEVICE FOR THE MEASUREMENT OF TEMPERATURES WITH THERMO ELEMENTS ON VERY FAST ROTATING MACHINERY (Ein Messgerät für die Temporaturmessung mit Thermoelementen auf Sehr Schnell Umlaufenden Maschinen). [1961] [16]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-10990

Trans. of ETZ Elektrotechnische Zeitschrift. Ausgabe B. Elektrotechniker (Germany) 1961, v. 13, no. 13, p. 353-357.

DESCRIPTORS: *Machines, Rotation, *Thermometers, *Temperature sensitive elements, Magnets, Magnetic fields, Temperature.

Amagnetic compensating method was used to measure temperatures on fast rotating machinery with thermo elements. The suitable designed electronic pare of the measuring device kept the errors very low within a wide range of RPM. It was possible to measure temperatures between 40° C and 450° C at revolutions between 190 and 18 000 with an error of 2%. It can be expected that up to 60 000 RPM the error will be kept within the same limit. This could not be confirmed, as a suitable drive was not available. (Author)

Wave Propagation

RADIOPHYSICS, 1959, VOL. 2, NO. 4 [SELECTED ARTICLES]. [1961] 30p. 55 refs. MDF D 137 [AFCRL-TN-60-956] AD-244 801.
Order from OTS $0.75 62-11560

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1959, v. 2, no. 4, p. 521-[572].

DESCRIPTORS: *Radio waves, Scattering, *Ionosphere, Electromagnetic effects.

Contents:
- Certain Questions of the Theory of Wave Propagation in Media with Random Inhomogeneities (Survey), by N. G. Denisov and V. A. Zverev
- On the Question of Radiowave Distortion during Propagation in the Ionosphere, by I. M. Vilenskii and N. A. Zykova
- Electromagnetic Wave Propagation in a Medium with Random Inhomogeneities over a Perfectly Conducting Plane, by Ye. A. Kaner and F. G. Bass
- Correlation of Fluctuations of the Electromagnetic Field in a Medium with Random Inhomogeneities over a Perfectly Conducting Plane, by F. G. Bass and Ye. A. Kaner.

Bass, F. G.
ON THE THEORY OF COMBINATION SCATTERING OF WAVES ON A ROUGH SURFACE. [1961] 12p. 8 refs. MDF B-185 [AFCRL-511] AD 262 417.
Order from OTS $0.50 62-11571

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1961, v. 4, no. 1, p. 58-66.

DESCRIPTORS: *Wave transmission, *Electromagnetic waves, Scattering, *Acoustics, Dielectrics, Mathematical analysis.

Combination scattering of electromagnetic and acoustic waves by rough surfaces is analyzed. An expression for the intensity of scattered electromagnetic waves is obtained in a form suitable for any nature of surface roughness. Besides the intensity of the scattered radiation, its frequency spectrum is also investigated. It is shown that a combination scattering effect, analogous to the Mandel'shtam-Raman effect, occurs during scattering on a time-varying surface. The problem formulated is a particular case of the more general problem of the radiation of waves by currents flowing on the surface of a substance with arbitrary dielectric permeability.

Bobrovnikov, M. S. and Starovoitova, R. P.
CONCENTRATED EXCITATION OF A METAL CYLINDER WITH A DIELECTRIC COATING. [1961] 11p. 9 refs. MDF B-189 [AFCRL-588] AD-262 524.
Order from OTS $0.50 62-11568

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii] Radiotekhnika (USSR) 1961, v. 4, no. 2, p. 140-147.

DESCRIPTORS: Dielectrics, Coatings, Excitation, *Dielectric films, Metals, *Cylindrical bodies, *Electron wave tubes, Mathematical analysis, *Electromagnetic waves.

The problem is analyzed of the symmetric concentrated excitation of an infinitely long metal cylinder covered with a dielectric layer by a ring of magnetic flux. It is shown that a plane surface wave propagated along the cylinder and a spherical radiation wave are here excited. The efficiency of the excitation of the surface wave is determined (the ratio between the surface and space wave energies). The radiation resistance of the emitting system is found. (Author)

Borodina, S. V.
ANALYSIS OF THE SHAPE OF ATMOSPHERICS. [1961] 25p. 7 refs. MDF B-187 [AFCRL-571] AD-262 422.
Order from OTS $0.50 62-11569

Trans. of [Nauchno-Issledovatel'skii Institut Zemnogo Magnetizma, Ionosfery i Rasprostraneniya Radiovoln]. Trudy (USSR) 1960, v. 17(27) p. 3-26.

DESCRIPTORS: *Atmospherics, Analysis, *Electromagnetic waves, Propagation, Harmonic analysis, Ionosphere, Spectrographic analysis.

It is shown how the propagation velocity of audio frequency electromagnetic waves and the effective conductivity of the lower part of the ionosphere at these frequencies can be determined on the basis of studying the phase characteristics of atmospherics by using a method proposed by Ya. L. Al'pert (Uspekhi Fiz. Nauk 60: 370, 1956). Results of the analysis of atmospherics whose sources are 500 to 3300 km from the observation point are presented. The behavior of the function B(ω, r), which characterizes the properties of the medium and expresses the frequency dependence of the signal amplitude for various ranges, is obtained from these data and from data on the source of atmospherics The experimental curves of the relative values of B(ω, r) and other data on the amplitude of the field are compared with the theoretical results of Al'pert. The results of an analysis of the phase spectra of atmospherics and the results obtained on the phase velocities of electromagnetic waves in the 2- to 20-kc band are analyzed in detail. A comparison of the experimental curve of the frequency dependence of the phase velocity with the theoretical curve yields good agreement for f ≥ 3 kc and noticeable divergence for f < 3 kc. The question of determining the effective parameters of the lower part of the ionosphere responsible for the propagation of very long electromagnetic waves is also considered. (See also 59-18394)

Denisov, N. G.
ELECTROMAGNETIC WAVE DIFFRACTION IN A GYROTROPIC LAYER CONTAINING RANDOM INHOMOGENEITIES. [1960] 14p. 11 refs. MDF D-138 [AFCRL-TN-60-987] AD-244 800.
Order from OTS $0. 50 62-11185

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1960, v. 3, no. 3, p. 393-404.

DESCRIPTORS: *Electromagnetic waves, Diffraction, Propagation, Wave transmission, *Ionospheric propagation.

Electromagnetic wave propagation in a magneto-active layer containing random inhomogeneities of the electron concentration is analyzed. Formulas are obtained which determine the angular energy spectrum and the transverse correlation function of the scattered field. It has been shown that the energy flux in the scattered wave consists, basically, of fluxes related to two typed of waves. (Author)

Denisov, N. G.
ON THE INFLUENCE OF THE REFLECTION REGION ON RADIOWAVE SCATTERING IN THE IONOSPHERE [1961] 10p. 5 refs. MDF D-135 [AFCRL TN-60-787] AD-244 803
Order from OTS $0. 50 62-11183

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1960, v. 3, no. 2, p. 208-215.

DESCRIPTORS: *Radio waves, Scattering, *Ionosphere, Electromagnetic effects.

On the basis of the solution of the scalar wave equation, the question is investigated of the effective scattering region in a linear ionosphere layer. The diffraction by a fine irregular screen in the linear layer is analyzed as is the scattering by random inhomogeneities extended along the propagation direction. (Author)

Dolukhanov, M. P.
ON THE CHARACTER OF SIGNAL DISTORTION IN A SINGLE SIDEBAND TELEPHONE SYSTEM IN TROPOSPHERIC COMMUNICATION LINES. [1960] 7p. 5 refs. MDF D-136.
Order from OTS $0. 50 62-11184

Trans. of #Elektrosvyaz' (USSR) 1959, v. 13, no. 11, p. 12-16.

DESCRIPTORS: *Telephone signals, Distortion, Transmission, *Telephone lines, Interference, Sidebands, Attenuation, Signals, *Communication systems, *Ionospheric propagation.

The character of signal distortion in tropospheric communication lines in the stationary region because of propagation processes is investigated theoretically. An idealized case is considered of the interference of two rays which is then extended to the real troposphere It is established that transient distortions do not occur during the propagation process in single-sideband telephone transmission. The only kind of distortion is facing and Doppler frequency changes (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACTIVITIES OF THE SIBERIAN BRANCH OF THE ACADEMY OF SCIENCES USSR. 25 May 62 [108]p. JPRS: 13887.
Order from OTS or SLA $9. 10 62-24982

Trans. of Nauka i Zhizn' (USSR) 1962 [v. 29] no. 1, p. 2-5, 7-19, 21-29, 32-69, 71.
##Other translations of p. 10-13 and 47-49 are available from OTS or SLA $1. 10 ea. as 62-23860 and 62-23850.

DESCRIPTORS: *Siberia, Scientific organizations, *Scientific research, Universities, Education, Nucleic acids, Geology, Steam turbines, Gas turbines, Turbines, Plasma physics, Generators, Thermonuclear reactions, Automatic, Measurement, Instrumentation, Digital computers, Computers, Computer logic, Electrolytic capacitors, Capacitors, Polymers, Pigments, Irrigation systems, Vibration, Surgery, Heart (Research Methods, Techniques and Equipment, Physiology, Biochemistry, Chemistry, Circulatory system, Diseases, Coal, Mining engineering, Metals, Thermodynamics, Explosions, Electricity, Transmission lines, Snow, Ice.

Contents:
Introduction
Siberia, a country of great science
Novosibirsk, academy city
The new principles of instruction, by I. N. Vekua
The presidium in session -- the experts speak

##The rehabilitation of desoxyribonucleic acids, by R. Salganik
The basic task, by A. A. Trofimuk
Steam-gas installations, by S. A. Khristiyanovich
Generator for plasma, by V. Ya. Smolyakov
Budker interview at the Institute of Nuclear Physics, by V. Azernikov
IIS -- measuring informational systems, by K. B. Karandeev
Logical sorting, by K. M. Sobolevskii
Automatic line for winding sections of electrolytic condensers -- forty times more precise, by M. Monin
Polymer pigments, by E. P. Fokin
The problem of Kulunda (press conference)
Vibrometer
Device for measuring information
The exploratory operation, by E. N. Meshalkin
Probing the heart, by I. A. Medvedev
Chemistry and the Scalpel, by B. B. Fuks
##The unseen intermediary, by D. Knorre
Under a ceiling which draws down, by N. A. Chinakal
Facts and figures for the note book of the reader
Ghosts in retorts, by A. V. Nikolaev
The formerly indivisible
The knowledge of fire and cold, by E. Muslin
The riches of Gorno-Altai -- in the service of the nation, by G. A. Prudenskii
The taming of explosions
Supports without insulators, by M. S. Dubzhinskii
The secret of the snowstorm, by S. Efimov
Dykes of ice, by A. A. Bubyr'
Let the words of the scientists directed to the nation sound louder and louder, by M. A. Lavrent'ev
Concluding remarks.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATIONS AND INFORMATION PROCESSING NO. 102.
2 July 62 [18]p. 15 refs. JPRS: 14318.
Order from OTS or SLA $1.60 62-25613

Trans. of Voprosy Yazkoznaniya (USSR) 1962, v. 11, no. 1, p. 91-99 and no. 3, p. 147.

DESCRIPTORS: *Machine translation, Lauguage, Vocabulary, Digital computers, Scheduling.

Contents:
Machine deciphering of Mayan Manuscripts, by Yu. V. Knorozov
Letter to the editor of Voprosy Yazykovnaniya, by S. L. Sobolev.

MACHINE TRANSLATION (Mashinyi Perevod). Foreign Developments in Machine Translation and Information Processing no. 94. 24 Apr 62 [544]p. JPRS: 13543.
Order from OTS or SLA $26.00 62-24260

Trans. of Akademiya Nauk SSSR. Institut Tochnoi Mekhaniki i Vychislitel'noi Tekhniki. Trudy, 1961, v. 2, 447p.

DESCRIPTORS: *Machine translation, Vocabulary, Dictionaries, Literature, Pattern recognition, English language, China, Germany, Sweden, USSR, *Language, Digital computers, Computers, Programming

Contents:
One approach to the construction of a vocabulary for an intermediate language, by S. S. Belokrinitskaya and others
On the fundamental use of sense in machine translation, by A. K. Zholkovskii and others
Machine translation and establishing correspondence between language systems, by V. V. Ivanov
The operational form of an algorithm for machine translation, by V. A. Voronin
On standard operators for an algorithm for automatic analysis of Russian scientific text matter, by I. A. Mel'chuk
A system of independent configurational analysis of Chinese text matter in machine translation, by V. A. Voronin
The structure and nature of a glossary for independent analysis of Chinese text matter, by V. M. Zherebin
On solving conversion homonymy during independent analysis of Chinese text matter, by V. M. Zherebin
A description of the structure of independent grammatical analysis for machine translation from the German language, by V. V. Parshin
The structure of a dictionary and rules for analysis of the German language, by S. S. Belokrinitskaya
On the construction of rules for analyzing English verbs, by L. N. Bykova
On establishing the syntactical connections of prepositional phrases through formal analysis, by G. A. Tarasova
An approach to the problem of distinguishing forms ending in -O(-E) with an adjectival stem in the Russian language, by T. M. Nikolaeva
Syntactical indicators for words and syntactical analysis of clauses, by Yu. S. Martem'yanov
On an algorithm for independent morphological analysis of the Swedish language, by S. S. Belokrinitskaya and T. N. Moloshnaya
The principles of syntactical analysis of the Tatar language, by F. Dreizin and R. Rashitov
A table of Tatar-Russian correspondences, by F. Dreizin
The construction of sentences in independent synthesis of Russian text matter, by T. N. Nikolaeva
An algorithm of ordering words in a sentence in independent Russian language synthesis, by K. I. Babitskii
The basic characteristics of a Japanese-Russian dictionary for machine translation, by M. B. Efimov
An analysis of closed constructions in binary machine translation from Chinese to Russian, by A. A. Zvonov
The analysis of auxiliary words in binary machine translation from Chinese to Russian, by A. A. Zvonov
The linguistic problems of translation of poetry, by V. V. Ivanov
On the acceptability of phonological models, by V. V. Ivanov
An experiment in constructing a system for graphic analysis of Chinese characters, by M. B. Efimov and A. A. Zvonov
Problems in the design of a scanning device, by V. G. Komandrovskii

ORDINANCE FOR INCLUDING PRACTICING SCIENTIFIC WORKERS AND DISTINGUISHED PRODUCTION SPECIALISTS IN SCIENTIFIC RESEARCH WORK IN INSTITUTES. 16 Feb 61 [4]p. JPRS: 6763.
Order from OTS or SLA $1.10 62-19401

Trans. of Narodno Subranie. Izvestiya (Bulgaria) 1960, v. 11, no. 96, p. 1.

DESCRIPTORS: Scientific research, *Industrial research, *Professional personnel, Control.

SOVIET SCIENTIFIC ACTIVITIES AND ORGANIZATIONS. 3 Aug 62, 38p. JPRS: 14715.
Order from OTS $1.25 62-11718

Trans. of Kommunist, Erevan (USSR) 1962, 25 Mar, p. 3; Priroda (USSR) 1962 [v. 51] no. 3; p. 3-8; Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 1, p. 3-4, ##111-113; Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 2, p. 90-93, 95-96; Akademiya Nauk Latviiskoi SSR, Riga. Izvestiya, 1961, no. 11(172), p. 133-135; 1962, no. 2(175), p. 142, 151-154.
##Another trans. is available from OTS or SLA $1.60 as 62-25967, JPRS-14532, 20 July 62 [17]p.

DESCRIPTORS: *Scientific organizations, Conferences, Scientific personnel, Biology, Medicine, Siberia, Hydraulic research, Programming, Automatic, Fisheries, Vietnam, Agriculture, Animal industry, *Scientific research, Radioactive isotopes, Nuclear physics laboratories.

Contents:
General meeting of the Academy of Sciences of Armenia, 23 March
General meeting of the Academy of Sciences USSR, 6-7 Feb 62
##Scientific Conference of Young Scientists of the Institute of Experimental Biology and Medicine, Siberian Branch of the Academy of Sciences USSR (no. 1) 6-8 Dec 61, by V. V. Melekhov and others
Results of the XXII Congress of the CPSU and the tasks of the scientific institutions of the Siberian Branch of the Academy of Sciences USSR, by M. A. Lavrent'ev
International Association on Hydraulic Research (no.4) Dubrovnik, 4-7 Sep 61, by O. F. Vasil'ev
Conference on Automatic Programming, Warsaw, 5-15 Sep 61, by M. R. Shura-Bura
Vietnam Scientific Research Expedition (no. 2) by E. F. Gur'yanova
At the Academy of Sciences Latvian SSR, by P. Kokis
Radioactive isotope laboratory organized at the Academy of Sciences Latvian SSR, by J. Magnone
Scientific sessions and conferences held at the Academy of Sciences Latvian SSR during 1961, by J. Magnone
December 1961 sessions at the Presidium of the Academy of Sciences Latvian SSR, by J. Magnone.

TRANSLATED SWISS PATENTS [NO. 6]. Oct 62 [176]p.
Order from OTS $3.00 62-11028

Trans. of Swiss patents including patent number, class number, name and residence of patentee and patent owner, title, filing and priority date, and first claim. Excluded are those patents bearing priority dates from Australia, Austria, Canada, Great Britain, United States, and West Germany.

DESCRIPTORS: *Patents, Inventions, Switzerland.

Bardin, I. P.
PLAN OF BASIC SCIENTIFIC RESEARCHES OF THE DEPARTMENT OF TECHNICAL SCIENCES, ACADEMY OF SCIENCES USSR. FOR 1944. [1961] 3p.
Order from OTS or SLA $1.10 62-10868

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1944, no. 1/2, p. 3-12

DESCRIPTORS: *Scientific research, Research program administration.

Biryukov, B. V. and Konoplyakin, A. A.
DEVELOPMENT OF MATHEMATICAL-LOGIC IDEAS AS A FACTOR THAT PAVED THE WAY FOR CYBERNETICS. 29 Mar 62 [42]p. JPRS: 13242.
Order from OTS or SLA $4.60 62-23759

Trans. of Vestnik Istorii Mirovoi Kul'tury (USSR) 1961, no. 6, p. 45-59.

DESCRIPTORS: *Mathematical logic, *Cybernetics, Digital computers, Computer logic

Shaumyan, S. K.
URGENT PROBLEMS OF STRUCTURAL LINGUISTICS. Foreign Developments in Machine Translation and Information Processing no. 101. 25 June 62 [18]p. 26 refs. JPRS: 14252.
Order from OTS or SLA $1.60 62-25499

Trans. of Akademiya Nauk SSSR. Otdelenie Literatury i Yazyka. Izvestiya, 1962, v. 21, no. 2, p. 103-111.

DESCRIPTORS: *Cybernetics, Data processing systems, Machine translation, *Language, Vocabulary, Speech, Sound.

Solodovnikov, V.
CYBERNETICS AND AUTOMATION. 19 Feb 62 [6]p. JPRS: 12561.
Order from OTS or SLA $1.10 62-19169

Trans. from Pravda, Moscow (USSR) 1961, 27 Dec.

DESCRIPTORS: *Cybernetics, *Automation, Control, Control systems, Man, Digital computers, Computers.

Vakulovskaya, G. V. and Kulagina, O. S.
ON MACHINE TRANSLATION FROM FRENCH TO RUSSIAN: DESCRIPTION OF THE PROGRAM. Foreign Developments in Machine Translation and Information Processing no. 67. 19 Jan 62 [51]p. 2 refs. JPRS: 12046.
Order from OTS or SLA $5.60 62-15463

Trans. of mono. Problemy Kibernetiki (Problems of Cybernetics) Moscow, 1961, sec. 3, p. 245-262.

DESCRIPTORS: *Language, *Machine translation, *Programming, Digital computers, Computers, Scheduling

Vasil'ev, N.
A MACHINE IS LEARNING TO READ. Foreign Developments in Machine Translation and Information Processing no. 105. 1 Aug 62, 3p. JPRS: 14682.
Order from OTS $0.50 62-11715

Trans. from Krasnaya Zvezda (USSR) 1962, 8 July.

DESCRIPTORS: *Machine translation, *Digital computers, Computers, Programming, *Reading machines.

Rusinov, M. M.
THE NEWEST DEVELOPMENTS IN WIDE-ANGLE AEROPHOTOGRAPHIC OPTICS AND THE IMMEDIATE PROSPECTS FOR ITS DEVELOPMENT.
18 Jan 62 [20]p. 1 ref. JPRS: 12035.
Order from OTS or SLA $1.60 62-15503

Trans. of [Akademiya Nauk SSSR]. Laboratoriya Aerometodov. Trudy, 1959, v. 7, p. 114-120.

DESCRIPTORS: *Aerial photography, Photography, *Mapping, *Aerial cameras, *Wide field cameras, Cameras, Optics, Photographic lenses, Resolution.

Vorob'ev, G. G.
THE USE OF PUNCHED CARDS IN INDUSTRIAL AND RESEARCH LABORATORIES (SURVEY). Foreign Developments in Machine Translation and Information Processing no. 103. 13 July 62 [16]p. 8 refs. JPRS: 14468.
Order from OTS or SLA $1.60 62-32012

Trans. of #Zavodskaya Laboratoriya (USSR) 1962, v. 28, no. 3, p. 316-323.

DESCRIPTORS: Industry, *Scientific research, *Laboratories, *Punched card methods, Data processing systems.

Communication Theory

PRECEDENCE AND PROCEDURE SIGNS USED BY SOVIET ARMY TELEGRAPH COMMUNICATIONS: [GLOSSARY OF TERMS]. 22 Apr 60 [3]p. 3 refs. AF 1419587.
Order from OTS or SLA $1.10 61-28341

DESCRIPTORS: *Communications theory, *Telegraph systems, *Military communications, Communication systems.

Inose, Hiroshi,
BLOCKING PROBABILITY AND JUNCTOR CAPACITY OF A THREE STAGE TIME-DIVISION SWITCHING NETWORK. [1962] 20p. 6 refs.
Order from SLA $1.60 62-16605

Trans. of [Denki Tsushin Gakkai Zasshi] (Japan) 1961, v. 44, no. 5, p. 934-941.

DESCRIPTORS: *Telephone communication systems, Telephone lines, Panel boards (Electricity), Load distribution, *Probability, Switching circuits.

In an exchange system composed of modules with time-division switching networks, the time-division networks are assumed to be connected by inter-module time-division junctors or inner-module junctors; namely, the connection is made through the route of the time-division switching network-time-division junctor-time-division network. Equations expressing the blocking probability in a three stage time-division switching network are determined by approximation, calculated results of their numerical values presented, and the number of time-division junctors required to satisfy the basis of a given service is examined. In approximate calculations the arrival of incoming calls in each time division switching network was followed by Poisson's distribution, and for the occupation of calls was assumed to be mutually independent. This assumption tends to give a result on the safety side. (Author)

Salzmann, G.
RING MODULATOR WITH INTEGRATED FILTERS. [1962] 32p. 10 refs.
Order from SLA $3.60 62-16583

Trans. of Cables et Transmission (France) 1961, v. 15, no. 2, p. 148-159.

DESCRIPTORS: *Modulators, *Electric filters, Low-pass filters, Band-pass filters, Attenuation, Modulation, Impedance, Distortion, *Multichannel telephone systems, Design

The studies by D. G. Tucker and J. Gensel on the functioning of modulators between complex impedances have shown that under certain conditions the overall attenuation loss of a configuration consisting of a ring modulator and filters, can be very low, even zero, - at least theoretically. However, the practical use of this characteristic is hindered, in particular, by the difficulty of building transformers to surround the ring section. An arrangement is proposed without transformers between filters and ring-section, with the modulator configuration and its associated filters constituting a quadripole which has a frequency translation without dissipation, provided, the impedance matching in the effective bands is as perfect as possible. (Author)

SOCIAL SCIENCES

ASIATIC MAINLAND AFFAIRS, 1960 [VOL. 9] MAY. [1960] [59]p. Doc Nr. 101836.
Order from OTS or SLA $5.60 60-23137

Trans. of Tairiku Mondai (Japan) 1960 [v. 9] May.

DESCRIPTORS: *Asia, *Political science, *Commerce, Japan, China, North Korea, USSR.

BULGARIAN LAW GOVERNING DISCOVERIES, INVENTIONS AND RATIONALIZATION PROPOSALS. 24 Apr 61 [11]p. JPRS: 8144.
Order from OTS or SLA $1.60 62-19403

Trans. of Narodno Subranie. Izvestiya (Bulgaria) 1961, v. 12, no. 10, p. 1-3.

DESCRIPTORS: *Inventions, *Bulgaria, Political sciences, *Patents.

SOVIET PEDAGOGICAL ACTIVITIES. 23 May 62 [28]p. JPRS: 13879.
Order from OTS or SLA $2.60 62-24988

Trans. of Sovetskaya Pedagogika (USSR) 1961, v. 25, no. 11, p. 64-70; Shkola i Proizvodstvo (USSR) 1961, v. 5, no. 9, p. 84-85; Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961, v. 6, no. 10, p. 147-153.

DESCRIPTORS: *Education, Universities, Training, Psychology, *Labor, *Industrial training, *Instructors, Learning.

Contents:
On the strengthening of the relation between scientific-padagogic research and the solution of practical school problems, by I. T. Ogorodnikov
Conference of Problems of the Psychology of Labor Education and Training (Moscow, 30 Jan-1 Feb 61). by R. Sverchkova
The reorganization of higher schools, by V. F. Krasota.

Krotevich, S.
ALL-CHINA CENSUS FOR 1953. [1962] [21]p.
Order from OTS or SLA $2.60 62-16126

Trans. of Vestnik Statistiki (USSR) 1955, no. 5, p. 31-50.

DESCRIPTORS: *Population, *Vital statistics, *China, Sex, Age, Statistical analysis.

At 2400 on 30 June 1953 the total recorded population was 601,938,035. Of this total 574,205,940 were reported on the census blanks, and 27,732,095 were tabulated by other methods; of the latter number 8,397,477 were tabulated by the local authorities in the national minority rayons in which the census blank was not used, and in which elections to local administrative organs were not held. The population of Taiwan (7,591,298) was estimated on the basis of figures published in 1951, and the overseas Chinese population was estimated at 11,743,320 according to data collected by the Committee on the Affairs of the Chinese Population Living Abroad. Of the total population tabulated on the basis of the census blank returns (574,205,940), 297,553,518, or 51.82 percent, were men, and 276,652,422, or 48.18 percent, were women. Of the total population canvassed, the number of persons of age 18 and over is 338,339,392, or 58.92 percent of the total. Of the latter 1,851,312 fell in the 80-90 age group, and the number of persons over 100 years of age was 3,385; one individual in the last-named group was 155 years old. (Author)

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5014
Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo oborudovaniya
WELDING EQUIPMENT; CATALOG-MANUAL (Svarochnoye oborudovaniya; katalog-spravochnik) [Moscow] Tsentral'nyy institut nauchno-tekhnicheskoy informatsii elektrotekhnicheskoy promyshlennosti i priborostroyeniya [1960] 359p. 15,000 copies printed.

BR-SOV/5894
Bodner, Vasiliy Afanas'yevich, and Mikhail Stepanovich Kozlov
STABILIZATION OF AIRCRAFT AND AUTOMATIC PILOTS (Stabilizatsiya letatel'nykh apparatov i avtopiloty) Moscow, Oborongiz, 1961. 508p. Errata slip inserted. 10,000 copies printed.

BR-SOV/5895
Askinazi, Boris Moiseyevich
HOT FINISHING OF METAL SURFACES (Chistovaya obrabotka poverkhnostey metallov s podogrevom) Moscow, Mashgiz, 1961. 94p. Errata slip inserted. 9000 copies printed.

BR-SOV/5896
Kulakov, Mikhail Vasil'yevich, and Sergey Ivanovich Shchepkin
AUTOMATIC CONTROL AND MEASURING INSTRUMENTS FOR THE CHEMICAL INDUSTRIES (Avtomaticheskiye kontrol'no-ismeritel'nyye pribory dlya khimicheskikh proizvodstv) Moscow, Mashgiz, 1961. 552p. Errata slip inserted. 15,000 copies printed.

BR-SOV/5899
Kovalenko, Anatoliy Dmitriyevich and others
DESIGN OF CONICAL SHELLS WITH TAPERED WALL THICKNESS (Raschet konicheskikh obolochek lineyno-peremennoy tolshchiny) Kiyev, Izd-vo AN UkrSSR, 1961. 327p. 2500 copies printed.

BR-SOV/5900
Mikheyev, Viktor Ivanovich (Deceased)
HOMOLOGY OF CRYSTALS (Gomologiya kristallov) Leningrad, Gostoptekhizdat, 1961. 206p. 1000 copies printed.

BR-BUL/5901
Shinev, Khristo Dimitrov
ANTENNAS (Anteni) 2d rev. and enl. ed. Sofiya, Durzhavno izd-vo "Tekhnika," 1960. 409p. Errata slip inserted. 1066 copies printed.

BR-SOV/5902
Groshikov, Aleksandr Ivanovich and others
PRESSWORKING PROCESSES IN AIRCRAFT FABRICATION (Zagotovitel'no-shtampovochnyye raboty v samoletostroyenii) Moscow, Oborongiz, 1961. 555p. Errata slip inserted. 5000 copies printed.

BR-SOV/5903
Pinsker, Aleksandr Petrovich
APPLICATION OF SEMICONDUCTOR HALL GENERATORS IN AUTOMATION (Primeneniye poluprovodnikovykh generatorov Kholla v avtomatike) Kiyev, Gostenkhizdat UkrSSR, 1961. 121p. 8000 copies.

BR-SOV/5904
Morugin, L. A.
DELAY FEEDBACK PULSE DEVICES (Impul'snyye ustroystva s zapazdyvayushchey obratnoy svyaz'yu) Moscow, Izd-vo "Sovetskoye radio", 1961. 207p. 10,000 copies printed.

BR-SOV/5905
Krasil'nikov, Nikolay Nikolayevich
NOISE IMMUNITY IN TELEVISION SYSTEMS; FLUCTUATION NOISE IN TELEVISION (Pomekhoustoychivost' televizionnykh ustroystv; flyuktuatsionnyye shumy v televidenii) Moscow, Gosenergoizdat, 1961. 266p. 15,000 copies printed.

BR-SOV/5908
Korablev, Lev Nikolayevich
COLD-CATHODE TUBES (Lampy s kholodnym katodom) Moscow, Izd-vo AN SSSR, 1961. 175p. 10,000 copies printed.

BR-SOV/5910
Ivanov, Georgiy Petrovich
THE TECHNOLOGY OF ELECTROSPARK HARDENING OF TOOLS AND MACHINE PARTS (Tekhnologiya elektroiskrovogo uprochneniya instrumentov i detaley mashin) 2d ed., rev. and enl. Moscow, Mashgiz, 1961. 302p. Errata slip inserted. 8000 copies printed.

BR-SOV/5911
Khrenov, Konstantin Konstantinovich and Daniil Matveyevich Kushnerev
CERAMIC FLUXES FOR AUTOMATIC WELDING AND FACING (Keramicheskiye flyusy dlya avtomaticheskoy svarki i naplavki) Kiyev, Gostekhizdat, UkrSSR, 1961. 262p. 4000 copies printed.

BR-SOV/5912
Petrov, Viktor Pavlovich, and Arkadiy Arkadiyevich Sochivko
ARTIFICIAL EARTH SATELLITES AND THE WEATHER (iskusstvennyye sputniki Zemli i pogoda) Leningrad, Gidrometeoizdat, 1961. 182p. Errata slip inserted. 5000 copies printed.

BR-SOV/5915
Hryhor'yeva, Vera Vsevolodivna, and Vyktor Nykolayevych Klymenko
CHROMIUM CARBIDE-BASE ALLOYS (Splavy na osnovi karbidu khromu) Kiyev, Vydavn. Akademiyi nauk Ukr. RSR, 1961. 54p. 1500 copies printed.

BR-SOV/5916
Tiunov, L. A., and others
ANTIRADIATION MEASURES; HANDBOOK (Protivoluchevyye sredstva; spravochnik) Moscow, Izd-vo AN SSSR, 1961. 171p. Errata slip inserted. 5000 copies printed.

BR-SOV/5917
Berg, Lev Germanovich
INTRODUCTION THERMOGRAPHY (Vvedeniye v termografiyu) Moscow, Izd-vo AN SSSR, 1961. 367p. Errata slip inserted. 3500 copies printed.

BR-SOV/5919
Kadyshevich, Abo Yefimovich
TEMPERATURE MEASUREMENT OF THE FLAME; PHYSICAL PRINCIPLES AND METHODS (Ismereniye temperatury plameni; fizicheskiye osnovy i metody) Moscow, Metallurgizdat, 1961. 218p. Errata slip inserted. 4600 copies printed.

BR-SOV/5920
Smirnov-Alayev, Georgiy Aleksandrovich
RESISTANCE OF MATERIALS TO PLASTIC DEFORMATION; ENGINEERING METHODS OF CALCULATING THE PROCESS OF PLASTIC WORKING OF MATERIALS (Soprotivleniye materialov plasticheskomu deformirovaniyu; inzhenernyye metody rascheta operatsiy plasticheskoy obrabotki materialov) 2d ed., rev. and en. Moscow, Mashgiz, 1961. 462p. Errata slip inserted. 8000 copies printed.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations, Volume 8, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.